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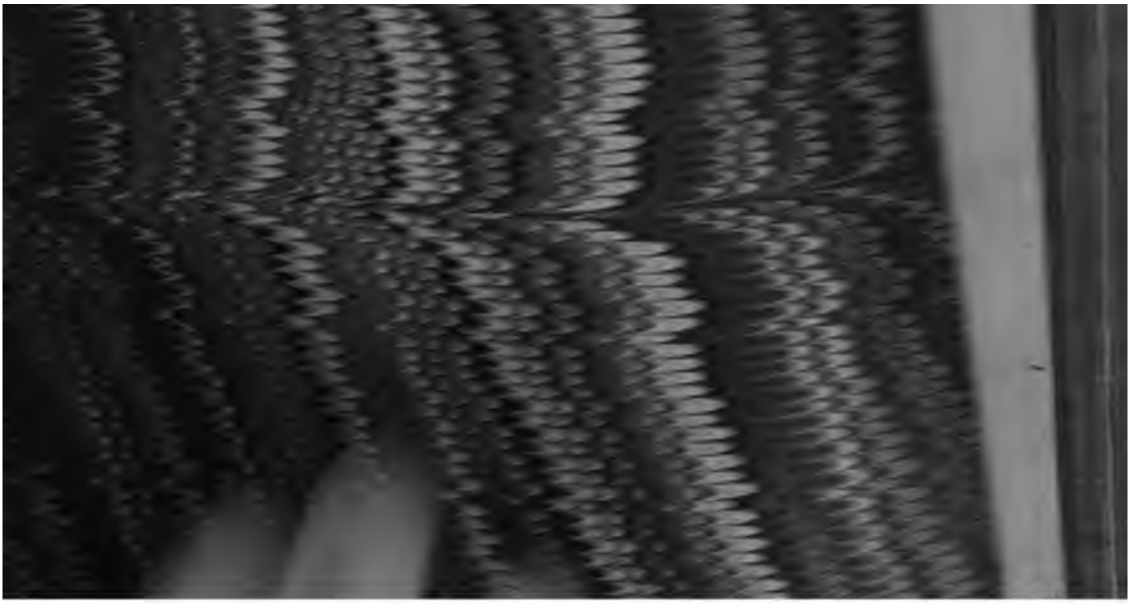

NEW
AMERICAN CYCLOPÆDIA.

VOL. V.
CHARTREUSE—COUGAR.

THE NEW

AMERICAN CYCLOPÆDIA:

A

Popular Dictionary

OF

GENERAL KNOWLEDGE.

EDITED BY

GEORGE RIPLEY AND CHARLES A. DANA.

VOLUME V.

CHARTREUSE—COUGAR.

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THE

NEW AMERICAN CYCLOPÆDIA.

CHARTREUSE, the name of various Carthusian monasteries, chiefly situated in France and Italy. The most famous institution of the kind is La Grande Chartreuse (*Cartusia*), situated in a picturesque but wild and desolate region, on the summit of a steep rock at an elevation of about 4,000 feet above the level of the sea, within 14 miles of Grenoble, in the French department of Isère. This monastery is the residence of the general of the Carthusian order. It owes its origin to St. Bruno, who repaired with 6 disciples to this locality in the latter part of the 11th century. It derived its name from a neighboring hamlet called Chartreuse, and it has since been called Grande Chartreuse from being the fountain-head of all other monasteries of the order. The cell which was inhabited by St. Bruno has been converted into a chapel, in which service is performed day and night. In the chapter house are the portraits of the generals of the order and a marble statue of St. Bruno. The buildings have repeatedly been destroyed by fire; those now in use were erected in 1678. During the first French revolution the monastery was stripped of its possessions. The number of its inmates, once 300, is now about 33, who depend for their support mainly upon the liberality of visitors.

CHARTULARIES, in the ancient Latin church, were the record books of the various monasteries, convents, and other religious and ecclesiastical foundations. Anterior to the 10th century, the pope ordered them to be kept. Their contents relate to the possessions, rents, endowments, and other temporalities of the church.—Chartulary, or Chartularius, the name of the keeper of charters and public documents. He also presided in ecclesiastical courts. In the Greek church, the word *chartophylax* is used to designate an officer of the same class, whose functions, however, are more comprehensive.

CHARYBDIS AND SCYLLA, in Grecian mythology, 2 voracious monsters which dwelt opposite to each other, the former on the Sicilian, and the latter on the Italian coast. Charybdis abode in a rock off the shore of Sicily, and thrice every day gulped down the waters of the surrounding sea, and thrice cast them up again. Scylla, whose den was in another rock on the Italian shore, was still more loathsome, having 12 feet and 6 long necks and mouths, each of which took a victim from every ship which passed within their reach.—In geography, Charybdis was a whirlpool on the coast of Sicily, and Scylla a rock on the coast of Italy, whose proximity rendered the navigation of the Messenian strait peculiarly dangerous to the sailors of antiquity.

CHASE, Irah, D.D., an American theologian, born in Stratton, Vt., Oct. 5, 1793. He graduated at Middlebury college in 1814, and immediately entered Andover theological seminary. He was ordained in 1817, and after laboring as a Baptist missionary in the western part of Virginia, became in 1818 professor in the theological school at Philadelphia, which was soon after transferred to Washington. In this office he remained 7 years, one of which he spent in Europe, and in 1825 he was prominent in establishing the theological school at Newton Centre, Mass. With this school he was connected as professor till 1845, since which time he has contributed several papers to reviews, on questions of church history and Christian doctrine.

CHASE, Philander, D.D., bishop of the Protestant Episcopal church in Ohio, and subsequently in Illinois, born in Cornish, N. H., Dec. 14, 1775, died at Jubilee college, Ill., Sept. 20, 1852. His parents were plain, pious farming people, and young Chase expected to follow in the footsteps of his father; but the course of events seemed plainly to indicate that a different career was before him. A severe injury to one of his limbs confined him for a long time to the house, and after much reflection upon his position and prospects, he resolved to prepare himself for college, and the ministry of the gospel. He entered Dartmouth college in 1791, and was graduated in 1795. His religious views had thus far been those of his family, who were Congregationalists; but having met with a prayer book of the Episcopal church, he examined and studied it with great care, and was led to the conviction that he ought to enter the ministry of that church. Leaving his home in New Hampshire, he set out for Albany; was kindly received by the Episcopal minister there; and after a course of study in theology, he was ordained in St. George's church, New York, in May, 1798. For several years he devoted himself, amid many privations, to missionary labors in western New York. In 1805, on account of his wife's health, he went to New Orleans, and occupied himself zealously in organizing the church there; in 1811 he returned to the north, and for 6 years was rector of Christ church, Hartford, Conn. Deeply interested in the religious condition and prospects of the great West, and full of missionary zeal and enterprise, Mr. Chase, in 1817, went to Ohio, and set about planting and enlarging the Episcopal church in that state. A diocese having been formed, he was elected its bishop, and was consecrated in St. James's church, Philadelphia, Feb. 11, 1819. Amid many and peculiarly severe trials, Bishop Chase persevered in his work; but it soon became evident that measures must be taken to educate men on the ground for the service of the ministry. Accordingly, with the approbation of his convention, although opposed by many of his own church in the older states, he resolved to visit England and solicit donations toward founding a college and theological seminary in Ohio. He embarked in October, 1823, at first met with opposition, which he soon overcame, was unusually successful, collected about $30,000 for his object, and on his return in 1824 purchased 8,000 acres of land, giving the names of 2 English noblemen, Gambier and Kenyon, to the site and the college, which was now established. For a time every thing went on prosperously; but difficulties and disputes having arisen between the bishop and some of his clergy about the disposal of the funds received from England, and other matters connected with his administration of the college and the diocese, he resigned his jurisdiction in 1831, and the general convention the next year gave their assent to this step. Bishop Chase now removed into Michigan, still intent upon the life of a missionary, pioneer bishop. In 1835 he was chosen bishop of the new diocese of Illinois. Again he visited England in behalf of Christian education in the West, and collected about $10,000 toward purchasing land and founding a college. Jubilee college, at Robin's Nest, Peoria co., owes its foundation, in 1838, to this second effort, and here the venerable prelate spent the remainder of his life. The first commencement of the college took place in July, 1847, and its subsequent career has evinced the perspicacity of Bishop Chase in providing for the future needs of the Episcopal church in the West. A severe injury caused by being thrown from his carriage hastened the aged bishop's decease, and a few days after he sank quietly to rest. Keenly sagacious in reading character, quick to avail himself of opportunities, full of zeal and determination, unwearied in laboring for the cause of religion and the interests of the Episcopal church, Bishop Chase left his impress upon the western country, and deserves honorable mention as the pioneer bishop. His "Reminiscences," 2 vols. 8vo., display his character in various lights; and apart from their historic value, these volumes are among the most entertaining productions of the present day.

CHASE, Salmon Portland, an American statesman, born in Cornish, N. H., Jan. 13, 1808. When he was 7 years old his father removed to Keene, where Salmon pursued his studies as a schoolboy. Two years later his father died, and when 12 years old he went to Worthington, Ohio, where his tuition was superintended by his uncle, Philander Chase, then bishop of Ohio. He then entered Cincinnati college, of which his uncle had meantime accepted the presidency, gaining shortly after his admission a promotion to the sophomore class. After about a year's residence in Cincinnati, he returned to his mother's home in New Hampshire, and in 1824 entered the junior class of Dartmouth college, where he was graduated in 1826. In the succeeding winter Mr. Chase opened a classical school for boys in Washington, having among his pupils the sons of Henry Clay, William Wirt, Samuel L. Southard, and other distinguished men of that day. Soon after closing his school in 1829, he was admitted to the bar of the district of Columbia, for which he had qualified himself under the direction of Mr. Wirt, during the time he was discharging the duties of a teacher. In the spring of 1830 he returned to Cincinnati, where he has ever since resided, except when interrupted by official duties, and pursued the profession of the law. While struggling through the early embarrassments of professional life, Mr. Chase prepared an edition of the statutes of Ohio, with copious annotations, and a preliminary sketch of the history of the state, in 3 large vols. 8vo. This edition soon superseded all previous publications of the statutes, and is now received as authority in the courts. Aided by the reputation thus acquired, he soon gained a valuable practice, and early in 1834 became solicitor of the bank of the United States in Cincinnati, and not long after of one of the city banks. In 1837 Mr. Chase acted as counsel for a colored woman claimed as a fugitive slave, and in an elaborate argument, afterward published, controverted the authority of congress to impose any duties or confer any powers in fugitive slave cases on state magistrates, a position in which he has since been sustained by the U. S. supreme court; and maintained that the law of 1793 relative to fugitives from service was void, because unwarranted by the constitution of the United States. The same year, in an argument before the supreme court of Ohio, in defence of James G. Birney, prosecuted under a state law for harboring a negro slave, Mr. Chase asserted the doctrine that slavery is local and dependent on state law for existence and continuance, and insisted that the person alleged to have been harbored, having been brought within the territorial limits of Ohio by the individual claiming her as master, was thenceforth in fact and by right free. In

1838, in a newspaper review of a report of the judiciary committee of the senate of Ohio against the granting of trial by jury to alleged slaves, Mr. Chase took the same ground as in his legal arguments. In 1846 he was associated with the Hon. W. H. Seward as defendant's counsel in the case of Van Zandt before the supreme court of the United States. The case excited much interest, and in a speech which attracted marked attention, Mr. Chase argued more elaborately the principles which he had advanced in former cases, maintaining that under the ordinance of 1787 no fugitive from service could be reclaimed from Ohio unless there had been an escape from one of the original states; that it was the clear understanding of the framers of the constitution, and of the people who adopted it, that slavery was to be left exclusively to the disposal of the several states, without sanction or support from the national government; and that the clause in the constitution relative to persons held to service was one of compact between the states, and conferred no power of legislation on congress, having been transferred from the ordinance of 1787, in which it conferred no power on the confederation, and was never understood to confer any. He was subsequently engaged for the defence in the case of Driskell *vs.* Parish, before the U. S. circuit court at Columbus, and re-argued the same positions.—Mr. Chase's sentiments of hostility to the nationalization of slavery were expressed by his position in the political movements of the country, as well as in his efforts at the bar. Prior to 1841 he had taken little part in politics. He had voted sometimes with the democrats, but more commonly with the whigs, who, in the North, seemed to him more favorable to anti-slavery views than their opponents. He supported Gen. Harrison in 1840, but the tone of his inaugural address, and still more the course of the Tyler administration, convinced him that no effective resistance to the encroachments of slavery was to be expected from any party with a slaveholding and pro-slavery wing, modifying if not controlling its action; and in 1841 he united in a call for a convention of the opponents of slavery and slavery extension, which assembled at Columbus in December of that year. This convention organized the liberty party of Ohio, nominated a candidate for governor, and issued an address to the people defining its principles and purposes. This address, written and reported by Mr. Chase, and unanimously adopted by the convention, deserves attention as one of the earliest expositions of the political movement against slavery. In 1843 a national liberty convention assembled at Buffalo. Mr. Chase was an active member of the committee on resolutions, to which was referred, under a rule of the convention, a resolution proposing "to regard and treat the *third* clause of the constitution, whenever applied *to* the case of a fugitive slave, as utterly null and void, and consequently as forming no part of the constitution of the United States, whenever we are called upon or sworn to support it." Mr. Chase opposed the resolution, and the committee refused to report it. It was, however, afterward moved in the convention by its author, and adopted. Having been charged in the U. S. senate with the authorship and advocacy of this resolution, by Mr. Butler of South Carolina, who denounced the doctrine of mental reservation apparently sanctioned by it, Mr. Chase replied: "I have only to say I never proposed the resolution; I never would propose or vote for such a resolution. I hold no doctrine of mental reservation. Every man, in my judgment, should speak just as he thinks, keeping nothing back, here or elsewhere." In 1843 it became Mr. Chase's duty to prepare an address on behalf of the friends of liberty, Ireland, and repeal in Cincinnati, to the loyal national repeal association in Ireland, in reply to a letter from Daniel O'Connell. In this address Mr. Chase reviewed the relations of the federal government to slavery at the period of its organization, set forth its original anti-slavery policy, and the subsequent growth of the political power of slavery, vindicated the action of the liberty party, and repelled the aspersions cast by a repeal association in Cincinnati upon anti-slavery men. In 1845 Mr. Chase projected a southern and western liberty convention, designed to embrace "all who, believing that whatever is worth preserving in republicanism can be maintained only by uncompromising war against the usurpations of the slave power, and are therefore resolved to use all constitutional and honorable means to effect the extinction of slavery within their respective states, and its reduction to its constitutional limits in the United States." The convention was held in Cincinnati in June, 1845, and was attended by 4,000 persons; delegates were present to the number of 2,000. Mr. Chase, as chairman of the committee, prepared the address, giving a history of slavery in the United States, showing the position of the whig and democratic parties, and arguing the necessity of a political organization unequivocally committed to the denationalization of slavery and the overthrow of the slave power, and exhibiting what he regarded as the necessary hostility of the slaveholding interest to democracy and all liberal measures. This address was widely circulated. In 1847, Mr. Chase was a member of the second national liberty convention, and opposed the making of any national nomination at that time, urging that a more general movement against slavery extension and domination was likely to grow out of the agitation of the Wilmot proviso, and the action of congress and political parties in reference to slavery. In 1848, anticipating that the conventions of the whig and democratic parties would probably refuse to take ground against the extension of slavery, he prepared a call for a free territory state convention at Columbus, which was signed by more than 3,000 voters of all political parties. The convention thus called was largely attended, and invited a national convention to meet at Buffalo in August. The influence of Mr. Chase was conspicuous in the state convention, and no less so in the national convention which assembled upon its invitation, and nominated Mr. Van Buren for president. An immense mass meeting was also assembled at Buffalo at the same time. Mr. Chase was president of the national convention, and also a member of its committee on resolutions. The platform was substantially his work.—On Feb. 22, 1849, Mr. Chase was chosen a senator of the United States from Ohio, receiving the entire vote of the democratic members of the legislature, and of those freesoil members who favored democratic views. The democratic party of Ohio, by the resolutions of its state convention, had already declared slavery an evil; and practically, through its press and the declarations of its leading men, had committed itself to the denationalization of slavery. Mr. Chase, therefore, coinciding with the democrats in their general views of state policy, supported their state nominees, distinctly announcing his intention, in the event of the party's desertion of its anti-slavery position, in state or national conventions, to end at once his connection with it. When the nomination of Mr. Pierce by the Baltimore convention of 1852, with a platform approving the compromise acts of 1850, and denouncing the further discussion of the slavery question, was sanctioned by the democratic party in Ohio, Mr. Chase, true to his word, withdrew from it, and addressed to the Hon. B. F. Butler of New York, his associate in the Buffalo convention, a letter in vindication of an independent democratic party. He prepared a platform, which was substantially adopted by the convention of the independent democracy at Pittsburg in 1852. Having thus gone into a minority rather than compromise his principles, Mr. Chase gave a cordial and energetic support to the nominees and measures of the independent democracy, until the Nebraska bill gave rise to a new and powerful party, based substantially upon the ideas he had so long maintained. As a senator of the United States, Mr. Chase delivered on March 26 and 27, 1850, a speech against Mr. Clay's compromise bill, reviewing thoroughly all the questions presented in it. He moved an amendment providing against the introduction of slavery in the territories to which the bill applied, but it failed by a vote of 25 to 30. He proposed also, though without success, an amendment to the fugitive slave bill, securing trial by jury to alleged slaves, and another conforming its provisions to the terms of the constitution, by excluding from its operation persons escaping from states to territories, and *vice versa*. In 1854, when the bill for the repeal of the Missouri compromise, commonly called the Nebraska-Kansas bill, was introduced, he drafted an appeal to the people against the measure, which was signed by the senators and representatives in congress concurring in his political opinions; and in a speech on Feb. 3 attempted the first elaborate exposure of the features of that bill, as viewed by its opponents. In the general opposition to the Nebraska bill he took a leading part, and the rejection of 3 of his proposed amendments was thought to be of such significance as bearing on the slavery question, that it may be well to state them. The first proposed to add after the words "subject only to the constitution of the United States," in section 14, the following clause: "Under which the people of the territory through their appropriate representatives may, if they see fit, prohibit the existence of slavery therein." This was rejected, yeas 10, nays 36. The second proposed to give practical effect to the principle of popular sovereignty by providing for the election by the people of the territory of their own governor, judges, and secretary, instead of leaving, as in the bill, their appointment to the federal executive. This was defeated, yeas 10, nays 30. He then proposed an amendment of the boundary, so as to have but one territory, named Nebraska, instead of two entitled respectively Nebraska and Kansas. This was rejected, yeas 8, nays 34. His opposition to the bill was ended by a final and earnest protest against it on the night of its passage. While thus vigilant in maintaining his principles on the slavery question, Mr. Chase was constant in the discharge of the general duties of his position. To divorce the federal government from all connection with slavery; to confine its action strictly within constitutional limits; to uphold the rights of individuals and of the states; to foster with equal care all the great interests of the country, and to secure an economical administration of the national finances, were the general aims which he endeavored, both by his votes and his speeches, to promote. On the interests of the West he always kept a watchful eye, claiming that the federal treasury should defray the expense of providing for the safety of navigation on our great inland seas, as well as on the Atlantic and Pacific coasts, and advocating liberal aid by the federal government to the construction of a railroad to the Pacific by the best, shortest, and cheapest route. He was an earnest supporter of the policy of the free homestead movement, in behalf of which he expressed his views during the first session of his term, on presenting a petition for granting the public lands, in limited quantities, to actual settlers not possessed of other land. He was also an early advocate of cheap postage, and an unwearied opponent of extravagant appropriations.—In July, 1855, Mr. Chase was nominated by the opponents of the Nebraska bill and the Pierce administration for governor of Ohio, and was elected. His inaugural address, delivered in 1856, recommended economy in the administration of public affairs, single districts for legislative representation, annual instead of biennial sessions of the legislature, and ample provision for the educational interests of the state. His state policy and senatorial course were now so much approved that at the national convention of the republican party, held the same year, a majority of the Ohio delegation and many delegates from other states desired his nomination for the presidency, but his name was, at his request, withdrawn. His first annual message to the Ohio legislature, in 1857, after reviewing the material resources and the financial and educational condition of the state, together with its federal relations, recommended a bureau of statistics, which was accordingly established. During the same year, a deficit of over $500,000 being discovered in the state treasury a few days before the semi-annual interest on the state debt became due, the decided action of Gov. Chase compelled the resignation of the state treasurer, who had concealed its existence, secured a thorough investigation, and through a prompt and judicious arrangement, protected the credit of the state and averted a large pecuniary loss. At the close of his first term Gov. Chase desired to retire from office, but the republicans insisted on his renomination, which was made by acclamation. After an active canvass the continued confidence of the people in his administration was manifested by his reëlection by the largest vote ever given for a governor in Ohio. In his annual message, in 1858, after submitting an elaborate exposition of the financial condition and resources of Ohio, he recommended semi-annual taxation, more stringent provisions for the security of the treasury, and a special attention to the state benevolent institutions, including the reform school, in which he had always manifested a deep interest. These suggestions met the approbation of the legislature, and laws were passed accordingly.

CHASE, SAMUEL, one of the signers of the declaration of independence, and a judge of the U. S. supreme court, born in Somerset county, Maryland, April 17, 1741, died June 19, 1811. His father, an Episcopal clergyman of English birth, directed his early education, and sent him to study law at Annapolis, where he was admitted to the bar at 20 years of age. He was soon noted as a skilful and eloquent advocate, and a learned lawyer. He strenuously opposed the royal governor and his adherents in the colonial legislature, was among the most vehement in resisting the stamp act, and soon became the leader of the friends of liberty in his state. The Maryland convention sent him as one of 5 delegates to the continental congress of 1774, and he continued a member of successive congresses until the end of 1778. It was he who denounced the Rev. Dr. Zubly of Georgia as a traitor, and compelled him to flee the congress whose secrets he was divulging to the enemy. In 1776 he went with Charles and John Carroll on a mission to Canada, which he was the more ready to undertake, because the Maryland convention was inclined to half-way measures and refused to instruct its delegates to vote for the declaration of independence. On his return he canvassed the state, brought public opinion to bear on the convention, and having thus caused the passage of the desired resolution, returned to Philadelphia in season to vote for independence. He was appointed on most of the important committees in congress, where his industry was unwearied. The 2 or 3 last years of the war he spent at home in the practice of law, to the study whereof he had, while in congress, devoted all the time at his command. In 1783 he went to England as commissioner of Maryland, to recover funds invested previously to the war in the bank of England. He remained there nearly a year, and succeeded in putting the claim so far in the way of adjustment that subsequently $650,000 was paid over to that state. In 1786 he removed to Baltimore, and in 1788 was appointed chief justice of a newly-established criminal court there, and in 1791 chief justice of the general court of Maryland. Between these 2 dates he was a member of the Maryland convention for considering the federal constitution, which he did not think sufficiently democratic. His course on the occasion of a riot in 1794 characterizes the man. He had caused the arrest of 2 popular men, as ringleaders. They refused to give bail, and the sheriff was apprehensive of a rescue should he take them to prison. "Call out the posse comitatus, then," cried the judge. "Sir," was the reply, "no one will serve." "Summon me, then; I will be the posse comitatus, I will take them to jail." Such was the state of the public mind, that the grand jury, instead of presenting the rioters, presented the judge for holding a place in 2 courts at the same time. He simply told them that they had meddled with topics beyond their province. In 1796, Washington, with whom he had been long intimate, appointed him an associate justice of the supreme court. In 1804 the house of representatives, at the instance of John Randolph, impeached him for misdemeanor in the conduct of several political trials, particularly those of Fries and Callender, convicted of seditious libels 5 years before. The senate discharged him, March 5, 1805, a majority being in his favor on 5 of the 8 charges, and a majority against him on the residue. After his discharge, Judge Chase resumed his seat on the bench, which he retained until his death. His reputation is that of a pure patriot, a learned and able but occasionally overbearing judge, and a courageous but somewhat irascible man.

CHASLES, MICHEL, a brilliant French geometer, born at Épernon (Eure-et-Loir), Nov. 15, 1793. He entered the polytechnic school in 1812, and has employed himself from that time in writing upon geometry and mechanics. In 1841 he was appointed professor of astronomy and mechanics in that school, and in 1846 called to a chair then first established by the faculty of sciences, a professorship of the higher geometry. Beside his numerous and valuable contributions to mathematical and scientific journals, Chasles published in 1837 a "Historical View of the Origin and Development of Methods in Geometry, especially those which relate to Modern Geometry," accompanied by a memoir on geometry of great originality and value. This was followed 6 years afterward by a "History of Arithmetic;" but his fame rests principally upón his geometrical writings, which show him to be a good analyst, and perhaps the first geometer of the age. In 1852 he published his *Traité de géometrie supérieure;* and 2 interesting papers of his appeared in the journals of the academy of sciences of May 30 and Aug. 29, 1853.

CHASLES, Victor Euphémion Philarète, a French writer, born at Mainvilliers, near Chartres, Oct. 8, 1799. The son of a member of the French convention, he became an apprentice in a printing office at Paris, and was in 1815 arrested on suspicion of being implicated in a political conspiracy. He was released through Châteaubriand's intervention, and went to England, where he found employment with the learned printer Valpy on a new edition of the classics. He also devoted his leisure hours to the study of the English language and literature. In 1822 he visited Germany, and on his return to France was attached as amanuensis to M. Jouy, and was believed to have aided that gentleman in his sketches of French society. Eventually he became a contributor to the *Revue Britannique, Revue de Paris, Revue des deux mondes,* and especially to the *Journal des débats;* and was finally appointed professor of foreign literature in the college of France, and one of the keepers at the Mazarine library. His principal historical works are *La révolution d'Angleterre,* in 2 parts, the 1st treating of *Charles I., sa cour, son peuple, et son parlement,* and the 2d of *Oliver Cromwell, sa vie privée, ses discours publics, sa correspondance particulière.* His literary activity is prodigious, and he has published novels, tales, descriptions of America, England, Germany, and Spain, and various historical writings. Apart from his original contributions to the daily and periodical press, he has furnished many translations from the English, and has contributed not a little in awakening interest for English literature in France. He has also done more than perhaps any other writer to extend the knowledge of American literature on the continent of Europe. A translation of Jean Paul Richter's *Titan* has appeared under his name. M. Chasles's literary views may be gleaned from his *Essai sur les phases de l'histoire littéraire, et sur les influences intellectuelles des races,* which precedes his *Études sur l'antiquité.*

CHASSÉ, David Hendrik, baron, a general of the Netherlands, defender of the citadel of Antwerp, born at Thiel in Gelderland, March 18, 1765, died in Breda, May 2, 1849. He entered the army at an early age, and having at first joined the party of the patriots, fled to France on their defeat and entered the French service. In 1793 he had attained the rank of lieutenant-colonel, and went with Pichegru to Holland, where he was engaged against the English. Subsequently he served in the French army in the peninsula, and acquired a reputation for desperate bravery. King Louis conferred a title on him for his conduct at Ocaña, and he was afterward made lieutenant-general for services in the passes of the Pyrénées. In 1814 he was wounded near Paris, in an engagement with Prussians. After the peace he went into the Dutch service, and greatly distinguished himself in the battle of Waterloo. When the Belgians declared for separation, Baron Chassé was sent to Antwerp, and on the entrance of the revolutionary bands into the city he retired into the citadel (Oct. 27, 1830), consenting to an armistice. This was broken by the Belgians, whereupon Chassé bombarded that part of the town where the insurgents lay. In Dec. 1832, he defended Antwerp bravely against the French, and on the capitulation of the fortress he was retained as a hostage, and removed to Dunkirk, but permitted to return to Holland after the signing of the preliminary treaty, May 12, 1833. Made a general of infantry, in reward for his services at Antwerp, he spent most of his remaining years on his estate in Gelderland.

CHASTEL, or Châtel, Jean, a French regicide, born in 1575, executed in Paris, Dec. 29, 1594. He made an attempt upon the life of Henry IV., Dec. 27, 1594, shortly after having left the Jesuits' college where he had been educated. He had succeeded in getting access to the palace, and while the king was receiving 2 noblemen, struck him with a knife, cutting his lips and breaking one of his teeth. He was immediately arrested, arraigned before the parliament, and sentenced to death. He confessed his crime, but declared it to be a meritorious act, as Henry was a heretic, usurper, and tyrant. He was put on the rack, had his right arm cut off, and was torn to pieces by 4 horses. The Jesuits, suspected of having been the abettors of Barrière, another assassin, and indirectly involved in Chastel's attempt, were ordered to leave Paris within 3 days, and France within a fortnight, while their property was confiscated.

CHASTELARD, or Chastellet, Pierre de Boscobel de, a French poet, born about 1540, died in 1563. He was a nephew, on his mother's side, of the chevalier Bayard. He was handsome, young, and accomplished in all the arts which were the pride of the young French nobility of the time; he was a distinguished performer in the tilt yard, famous for his skill with the sword, an excellent dancer, a delicate musician, and a poet of some note in the French court during Mary Stuart's residence in that country. He was one of the French gentlemen who, as attachés of Marshal Damville's household, accompanied her on her return to her native land, and fell in love with the beautiful queen. He dedicated a poem to her, which, according to Brantôme, the historian, was answered by Mary, who also allowed him to accompany her on the flute when she sang, had frequent interviews with him, and, says Miss Strickland guest was exposed to meet in his intended expedition. "But, sir," said the traveller, "it is less difficult to discover the polar passage than to create a nation, as you have done." Châteaubriand then visited New York, Boston, and Albany, and went among the Indian tribes, living with them, and exploring the country bordering on the great lakes. He afterward travelled through Florida, and spent some time among the Natchez. These peregrinations among the savages, the strange beauties of the American continent, the immensity of its rivers, the solitude of its forests, made a powerful impression upon his imagination. Nearly a year had thus been passed when an English newspaper, which he found in a log cabin, informed him of the flight and arrest of Louis XVI. Forthwith abandoning his projected expedition, he returned to France in order to place himself at the disposal of the king. Finding on his arrival at Paris that by his presence there he could not benefit the royal cause, but endangered his own life, he joined the emigrants at Coblentz. Before leaving France, however, he married Mlle. Céleste Delavigne Buisson, an excellent woman, who, during her long life, was his faithful but rather neglected wife. Having enlisted in a company who followed the Prussian army in their invasion of France, he was wounded while skirmishing in the vicinity of Thionville; at the same time he had a severe attack of the small-pox, and was left nearly dead on the road. A charitable person took care of him, and finally he was taken to Jersey, where he gradually recovered his health. In 1793 he went to London, where he led a miserable existence, living in an unfurnished garret, without fire, sometimes without food, too happy when he was able to earn something by giving French lessons or making translations for booksellers. In 1797, he published his *Essai historique, politique, et moral sur les révolutions anciennes et modernes, considérées dans leurs rapports avec la révolution Française*, which was rather unsuccessful in England and entirely ignored in France. He was then of a sceptical and somewhat materialistic turn of mind; but, being recalled to religious convictions by the dying appeal of his mother, he framed the plan of his *Génie du Christianisme*, and, encouraged by Fontanes, whom he had met in London, he engaged in writing it. About this period he succeeded in reëntering France under an assumed name, and supported himself by literary work, while completing the *Génie du Christianisme*. The episode of "Atala," which was incorporated in this work, was published separately in the *Mercure de France* in 1801, and excited much attention. The *Génie du Christianisme*, published in 1802, was the signal of a literary and moral revolution, and greatly contributed to the revival of religious principles in France. Bonaparte being pleased with the book, the author was appointed secretary of the French legation at Rome in 1803, and promoted in 1804 to the office of chargé d'affaires; but the execution of the duke of Enghien put an end to his friendly intercourse with Napoleon. He resigned his office, and afterward assailed the emperor most bitterly. In 1806 he visited Greece, Asia Minor, Palestine, and Egypt, and on his return retired to a small villa situated in the Vallée aux Loups, near Paris, where he composed *Les martyrs*, the most admired of his works, which was published in 1809. The notes of his travels were subsequently arranged to form the *Itinéraire de Paris à Jérusalem*. In 1811 he was made a member of the French academy, as the successor to Marie Joseph Chénier, but some difficulty as to his reception speech prevented his taking his seat, which he did not occupy till after the restoration. This last event was hailed with enthusiasm by Châteaubriand, who, as early as March 30, 1814, had published a political pamphlet, *De Bonaparte et des Bourbons*, which was eagerly sought for, and did excellent service to the king's cause. This was his first step in politics; and "this new life of his," St. Beuve says, "may be divided into three parts: 1, from March 30, 1814, to June 6, 1824, the period of pure royalism; 2, from June 6, 1824, when he was dismissed from the cabinet, to the end of the restoration, the period of liberal opinion, in flagrant opposition with the foregoing; 3, the period of mixed royalism and republicanism subsequent to the revolution of 1830, when Châteaubriand, for conscience sake, said to the duchess of Berry, 'Your son is my king,' while at the same time befriending Carrel and Béranger, and preparing himself beforehand for the coming republic." On the first return of the Bourbons, Châteaubriand was appointed ambassador to Sweden; but before he had departed for his post, Napoleon reappeared in France, and Châteaubriand followed Louis XVIII. to Ghent, became a member of his cabinet, presented him with his *Rapport sur l'état de la France*, and was on the 2d restoration appointed minister of state and peer of France; but having assailed, in the pamphlet *De la monarchie selon la charte*, the celebrated decree by which the *chambre introuvable* was dissolved, he forfeited the royal favor and lost his office. He now joined the ultra royalist opposition, and became one of the principal editors of the *Conservateur*, the most powerful organ of that party. In 1820 he was reconciled with the court, on occasion of the assassination of the duke of Berry, and wrote his *Mémoires* of that prince. In the same year he was appointed minister to Berlin, and in 1822 ambassador to London. He was one of the plenipotentiaries at the congress of Verona, where he was instrumental in bringing about the French expedition to Spain. On his return to France, he was appointed minister of foreign affairs, but being unable to agree with the prime minister, M. de Villèle, he was summarily dismissed, June 6, 1824. This time, instead of returning to his old associates, he joined the liberal opposition, and fought desperately against the Villèle ministry, by his speeches in the chamber of peers, as well as by his articles in the *Journal des débats*. He now proved himself the most ardent supporter of the freedom of the press, and eloquently advocated the independence of Greece, by which he acquired great popularity. On the fall of Villèle in 1828, he was made ambassador to Rome, but resigned on the formation of the Polignac cabinet. After the revolution of 1830, he manifested the most chivalric devotion to the duke of Bordeaux, notwithstanding his grievances against the family, and his attachment to the principles of liberty. He was at that time, as he said himself, "a Bourbonist from the point of honor, a royalist by reason, a republican by taste and disposition." He now ceased to take any active part in politics, and even deserted his seat in the chamber of peers; he, however, occasionally published bitter pamphlets against the new government, in which he defended the rights of the fallen dynasty. In 1833, judicial proceedings were instituted against him on account of his *Mémoire sur la captivité de la duchesse de Berry;* but he was acquitted by the jury. He also repeatedly visited the exiled Bourbons at Prague. These occasional bursts of political passion interfered but little with his literary pursuits, to which he had returned with youthful ardor. As early as 1831, he had published his *Études, ou discours historiques*, which were but an introduction to a history of France on a plan of vast proportions; unhappily, age and pecuniary embarrassments prevented his finishing the work. He completed, however, some lighter but more profitable performances; his *Essai sur la littérature Anglaise*, followed by a literal translation of Milton's "Paradise Lost," commanded general attention, while his *Congrès de Vérone* was eagerly read by the students of political history. From 1834, he devoted most of his time to completing an autobiography, which he called *Mémoires d'outre-tombe*, as they were to be published after his death. These he sold in advance in 1836, and lived on the annuity which was secured to him by the proceeds. His life was spent in retirement; the drawing-room of his friend Mme. Récamier, at the *Abbaye aux Bois*, being almost the only place he visited. There he could be seen every evening among the *élite* of the literary world, receiving the homage to which he was entitled by his character, genius, and renown. A profound melancholy, however, invaded his latter years. He, who had so often foretold the coming of the republic in France, witnessed its accession in 1848, but he died amid the desolation brought over the capital by the bloody struggle of June. According to his wishes, his remains were taken to Brittany and buried on a small island called the Grand Bé, in the vicinity of St. Malo. Most of his works have been translated into the English, German, and other languages. The French editions are very numerous, the most recent and convenient being that published at Paris by the Didots in their *Chefs-d'œuvre de la littérature Française*. The editions of his complete works of 1826 and 1836 contain valuable notices of his life, as well as critical remarks upon his writings. Marin's *Histoire de la vie et des ouvrages de M. de Châteaubriand* appeared in 1833, and M. Villemain's *Châteaubriand, sa vie, ses écrits, son influence sur son temps*, in 1858, in 2 vols.

CHÂTEAUBRIANT, FRANÇOISE DE FOIX, countess, a mistress of Francis I., born about 1495, died Oct. 16, 1537. A scion of the illustrious house of Foix, she repaired at an early age to the court of Louis XII., and became the wife of the count of Châteaubriant. She was in the zenith of her beauty when Francis I. ascended the throne. Notwithstanding the jealous temper of her husband, the king was soon on intimate terms with the beautiful countess, who publicly wore jewelry given to her by her royal lover, bearing mottoes which his sister, the witty Margaret, had written at his request. The royal favor served the interests of her brothers as well as her own ambition. Her husband, however, who was not noted for the gentleness of his disposition, resented her faithlessness, by frequently inflicting upon her corporal punishment. Her relation with the king lasted for a number of years, and previous to the defeat of Pavia and the captivity of the king her influence over him was unbounded; but on his return from Madrid, she was supplanted by the fair and younger Anne de Pisseleu, afterward duchess d'Étampes. The rest of her life was spent with her husband, in the now dismantled castle of Châteaubriant. A chamber is still pointed out in which, according to tradition, she was bled to death by her husband. This, however, is not supported by any positive evidence, although the brutal treatment to which he subjected her was a matter of general notoriety.

CHÂTEAU-MARGAUX, one of the 4 *crus* of the best class of Bordeaux wines, produced in the hamlet of the same name, which is situated in the department of the Gironde, in the commune of Margaux, within 15 m. of Bordeaux. The annual produce of Château-Margaux wine is estimated at 21,000 gallons, of which about 4,000 are of an inferior quality and the rest first class wine. In the midst of the vineyard stands the mansion of Château-Margaux, the handsomest Italian villa in Médoc, which belongs to the heirs of the Spanish banker, the marquis de Aguado, but is rarely inhabited owing to the malaria which prevails around it.

CHÂTEAUROUX, an arrondissement and town in the French department of the Indre (Berry); pop. of the former in 1856, 105,154, and of the latter, 18,227. The arrondissement consists of 8 cantons, and possesses 168,000 acres in grain, 12,000 in vineyards, 13,000 in various crops, 56,000 in meadow and pasturage, 105,000 of fallow land, and 80,000 in forest. The annual value of raw materials employed in manufacturing is $1,100,000, and of manufactured goods $1,600,000. The number of hands employed is 2,430. The daily wages of men is 35 cents and of women 16 cents.—Châteauroux, the chief town of the arrondissement, called Indreville during the first French revolution, is situated on the railway from Paris to Limoges, near the left bank of the Indre, on a vast plain, 160 m. from Paris. There is an old castle on an eminence above the Indre, a gloomy building in which the princess de Condé, niece of Richelieu, died in 1692, after having been imprisoned there for nearly 23 years. Châteauroux is one of the principal cloth manufacturing places of central France, the annual value of cloth being estimated at $800,000, and the wools produced in Berry being almost exclusively used in the fabrication. There are various other manufactures, and a considerable trade in the produce of the country, and important wool and iron fairs are held here. The branch office of the *banque de France*, at Châteauroux, discounted in 1857 bills to the extent of $1,000,000, and made advances on securities and specie to the amount of $220,000.

CHÂTEAU-THIERRY, an arrondissement and town in the French department of Aisne (Champagne); pop. of the former in 1856, 61,556, and of the latter, 5,523. The arrondissement consists of 5 cantons, and possesses 115,000 acres of grain land, 6,500 in vineyards, 7,500 in various products, 34,500 in meadow and pasturage, 47,000 of fallow land, 53,000 in wood and forest. The annual value of raw material employed in manufacturing is only about $2,000, and of manufactured goods about $7,000. Seventy-eight hands are employed in these, the average daily wages being for the men 36½ cents, for women 17 cents.—Château-Thierry, the town, is pleasantly situated on the right bank of the river Marne, on the Paris and Strasbourg railway, 59¼ m. by rail from the former city, and about 30 m. from Épernay. La Fontaine was born there.

CHÂTEL, Ferdinand François, the founder of the so-called French Catholic church, born at Gannat, department of Allier, Jan. 9, 1795, died in Paris, Feb. 11, 1857. His family being poor, he was apprenticed to a tailor. His assiduous attendance at church attracted the attention of a member of the clergy, who procured him admission to a theological seminary, where he was ordained in 1818. He became afterward a chaplain in the army, and from 1823 to 1830 officiated successfully as a preacher in several churches of Paris. Dissenting from the tenets of the Roman Catholic church, he had been for some time engaged in disseminating his views, and after the revolution of 1830 he came publicly forward as a reformer. He opened a free church on the boulevard St. Martin, which was attended by many attracted by curiosity, and by a few by sympathy with his views. He denied the divinity of Christ, and reduced religion to an operation of material laws. In 1831, at a mass meeting of his disciples, he caused himself to be proclaimed "primate bishop" of the new church. But divisions broke out among his followers, and his church was closed by the government in 1842. Appointed to a clerkship in the general post-office, he discontinued his agitation until 1848, when, on the outbreak of the revolution, he espoused the cause of woman's rights. He advocated the sanctioning of divorce by the church of Rome, and was one of the principal orators at the club for the emancipation of woman, over which Madame Niboyet presided. In the latter part of his life he endeavored to support himself as a teacher, but was mainly dependent upon his friends.

CHÂTELET (anc. *Castellucium*), the name of 2 fortresses which existed in Paris in former times, supposed to have been built by Julius Cæsar. The grand châtelet was restored and enlarged by St. Louis, Charles VIII., and Louis XII., remodelled by Louis XIV., and demolished in 1802. It stood on the right bank of the Seine, in the locality now occupied by the western part of the *place du châtelet*. It was the residence of the counts, and afterward of the provosts of Paris, and became celebrated as a prison, and as an important seat of the judiciary. At the time of the suppression of the latter in 1790, the court contained, from the provost down to the ushers and policemen, 1,207 officers, beside a large number of lawyers, who transacted business there, and the military forces of the châtelet, which consisted of 2 companies of soldiers, part of whom were at the same time employed as ushers.—The petit châtelet was situated on the left bank of the Seine, on the site of the present *place du petit pont;* swept away by an inundation in 1296, it was rebuilt in 1369, and demolished in 1782. Originally it was one of the gates of Paris, where tolls and excise duties were levied. The châtelets at Orleans and Montpellier were, like those of Paris, the seats of judicial bodies.

CHÂTELLERAULT, an arrondissement and town of France, department of Vienne; pop. of the former in 1856, 60,556, and of the latter, 14,084. The arrondissement comprises 6 cantons, and possesses 104,000 acres in grain, 10,000 in vines, 8,000 in various crops, 30,000 in natural and artificial meadow, 46,000 of fallow land, and 53,000 in wood and forest. The average annual value of raw material employed in manufacturing is $1,000,000, and of manufactured goods $1,100,000. The number of hands employed is 1,229, and the average daily wages is 34 cents for men, and 12½ cents for children.—The town is situated on the right bank of the Vienne, on the railroad from Paris to Bordeaux, 190 m. by rail from the former, and 175 m. from the latter city. It is one of the great centres of the manufacture of cutlery in France, which gives employment to about 600 families. There is also a national manufactory of side-arms, established in 1820. The annual value of the arms manufactured here for the government varies from $100,000 to $200,000. The town possesses, also, important iron works, manufactories of jewelry, laces, and hardware. An of the defences, it is believed that such an exploit would be now impossible.

CHATHAM, Earl of. See Pitt, William.

CHATHAM ISLANDS, a group in the Pacific, belonging to Great Britain, E. of New Zealand, between lat. 43° 40′ and 45° 20′ S., long. 176° and 177° 30′ W., consisting of Wairi-kaori, or Chatham island, from 80 to 90 m. in circumference; Rangi-haute, or Pitt island, 12 m. long by 8 broad; and a number of others which are mere barren rocks. The W. shore of the largest island is undulating, and clad with vegetation to the water's edge; the N. shore is flat; the S. and part of the E. rocky and precipitous. There are several bays and some good harbors, which have been frequented by whalers ever since the discovery of the group by Broughton in 1791. A whaling station was established at Oinga in 1840. Near the middle of the island is Tewanga lake, 25 m. long and 6 or 7 m. broad, S. of which the country is generally arable, the products being similar to those of New Zealand. The climate is mild and healthy. The aboriginal inhabitants, but few of whom remain, are of the Malay race, darker than the New Zealanders, by whom they have been reduced to slavery. The conquerors are said to have come from Port Nicholson a few years ago, whence they were driven by the Kapiti tribes. Lieut. Wilkes, of the U. S. exploring expedition, who visited the island in 1840, describes it as a nest of rogues, though the aborigines are said to be cheerful, good-natured, and inoffensive.

CHÂTILLON-SUR-SEINE, an arrondissement and town in France, department of the Côte d'Or; pop. of the former in 1856, 51,214, and of the latter 4,926. The arrondissement comprises 6 cantons, and contains 168,000 acres of grain land, 5,000 of vineyards, 9,000 of various other crops, 88,000 of natural and artificial meadow, 52,000 of fallow land, and 175,000 acres of wood and forest. The average annual value of the raw material employed in manufacturing is $1,600,000, and of goods manufactured $2,800,000. The number of hands employed is 1,706. The average daily wages are, for men 45 cents, 18½ cents for women.—The town is pleasantly situated on the Seine, which divides it into 2 parts, one of which is called Bourg, and the other Chanmont. Formerly they were both enclosed by separate walls and ditches and defended by a castle, which still remains in the *quartier de Chaumont*. In the 12th century the town was an important military station, and the residence of the early dukes of Burgundy. Previous to the first revolution it was the capital of the *Pays de la Montagne*, which formed part of the government of Burgundy. In Feb. 1814, a conference was held here between the representatives of Napoleon and the allied sovereigns. The town contains many remarkable antiquities, a hospital, primary judicial tribunal, a communal college, a small theatre, and a library with 7,500 volumes. An active trade is carried on in the products of the country, and the industrial establishments comprise manufactories of cloth, serge, hats, woollen and cotton yarns, beside tan yards, bark and fulling mills, and important iron works. Marshal Marmont was born there.

CHATMOSS, an extensive morass, area about 6,000 acres, lying chiefly within the parish of Eccles, Lancashire, England. A large part of it has been reclaimed and is now cultivated with profit. George Stephenson carried the Liverpool and Manchester railway over it when all other engineers considered the feat impossible.

CHÂTRE, La, an arrondissement and town of France, department of Indre (Berry); pop. of the former in 1856, 60,146, and of the latter 4,981. The arrondissement comprises 5 cantons, and possesses 51,000 acres of grain land, 4,000 of vines, 30,000 of various culture, 36,000 of natural and artificial meadow, 68,000 of fallow land, 4,400 of chestnut plots, and 29,000 of wood and forest. The average annual value of the raw material employed in manufacturing is $600,000, and of manufactured goods $750,000. The number of hands employed is 522, and the daily wages are 34 cents for men, 18½ cents for women, and 14 cents for children.—The town is pleasantly situated on the left bank of the river Indre, and contains a primary tribunal and a communal college.

CHATSWORTH, a celebrated estate in the parish of Edensor, Derbyshire, England; pop. of Edensor and Chatsworth townships, 846. A branch of the London and Northwestern railway leads from Manchester to Whaley bridge, and a coach from the latter place to Chatsworth. The place may also be reached by an omnibus from Rowley, the terminus of a branch of the Midland railway, which leaves from Ambergate. Chatsworth was among the domains given by William the Conqueror to William Peveril, his natural son. In the reign of Elizabeth, it was purchased by Sir William Cavendish, who began to build a mansion here, which after his death was completed by his widow, the countess of Shrewsbury. The present building was nearly completed by the first duke of Devonshire; a new wing has been built by the 6th duke of Devonshire (who died Jan. 18, 1858), who has greatly added to the beauty of the establishment. Chatsworth gardens are among the most famous in England. The grand conservatory is 300 feet long by 145 feet, comprising an area of about an acre, with a carriage road in the centre. The great glass house of the *Victoria regia* lily was erected under the direction of Mr., now Sir Joseph Paxton, the designer of the London crystal palace. The park is about 9 m. in circumference, and diversified with hill and dale. South and southwest of the mansion are remarkable water-works. The mansion is composed of 4 nearly equal sides, around an open quadrangular court. The principal works of art are sculptures by Thorwaldsen, Canova, Chantrey, and Westmacott. Chatsworth house was for 13 years the prison of Mary

himself by a bitter satirical attack. Having imbibed infidel principles, and already cherishing the purpose of self-destruction, in his 17th year Chatterton was dismissed from his apprenticeship, and set off for London. He designed a literary career, but if disappointed would become a Methodist preacher, founder of a sect, or would have the pistol for his final resort. He contributed to reviews and magazines; wrote political letters, sermons for clergymen, and songs for the public gardens; was introduced to the lord mayor Beckford, formed high expectations of influence as an opposition writer, and boasted that he "would settle the nation before he had done." At the death of Beckford soon after, he is said to have gone almost frantic; he dissipated his despair in elegies, removed to wretched lodgings, continued in his misery to remit presents to his mother and sister, to whom he had before announced his splendid hopes, suffered for want of food while with a gay exterior he frequented places of public amusement, retained his unconquerable pride and vanity, confided his distress to no one, declined the invitation of his landlady to a dinner after he had been 3 days without food, spent his last penny for a dose of arsenic, and was found dead in his room surrounded by numerous manuscripts which he had torn into shreds. He was interred in the pauper burying ground of Shoe lane, and the citizens of Bristol have erected a monument to his memory. It was several years before he became an object of public interest, and the result of the discussion concerning the poems which he ascribed to Rowley and other old poets is the general belief that, however extraordinary it was for Chatterton to have written them, it was impossible for them to have been written in the 15th century. In a life of less than 18 years this misdirected genius made himself proficient in the most various studies, created the person, history, and language of an ancient poet, composed epics, tragedies, satires, elegies, ballads, and long narrative poems, and exhibited not only a facility of versification but an immature luxuriance of fancy and power of invention which promised him a high position among English poets. The early poems of Pope and Cowley are not comparable to those of Chatterton, and even the almost fabulous Mirandola was less precocious if not less great. Warton called him a "prodigy of genius;" Shelley acknowledged his "solemn agency;" Wordsworth names him "the marvellous boy, the sleepless soul that perished in his pride;" Keats dedicated "Endymion" to his memory; and Alfred de Vigny has made him the subject of one of his finest dramas, in which he regards him as the type of a suffering and unrequited genius. The personal appearance of Chatterton was proud, manly, and very prepossessing. His eyes were gray and piercing, and, as in the case of Lord Byron, one of them was more brilliant than the other.—An edition of his works, with his life, was published under the direction of
Dr. Southey and Mr. Cottle, London,
a new edition, Cambridge, 1842.

CHATTOOGA, one of the head
the Savannah river, rises near the S
N. Carolina, and flows S. W. along
ary between S. Carolina and Geor
receiving the waters of Tallula cre
the name of Tugaloo river.

CHATTOOGA, a county in the
of Georgia, area 360 sq. m., deri
from the above river, by which it
ed. It borders on Ala., and is finely
by fertile valleys and forest-clad mou
nected with the Blue Ridge. Th
summits are called Taylor's ridge, Jo
tain, and Dirtseller mountain.
marble, iron, and lead are abundant.
ductions in 1850 were 301,180 bushe
corn, 52,986 of sweet potatoes, and
of cotton. There were 11 grist m
mills, 1 cotton factory, 4 tanneries, 1
and 330 pupils attending public sch
of real estate in 1856, $1,092,43
Summerville. Pop. in 1852, 6,941
1,927 were slaves.

CHAUCER, Geoffrey, an Englis
precise dates of whose birth and
tinue to be subjects of dispute.
Turner suggests that the year 15
likely to have been that in whic
was born, than the generally rece
He is supposed to have died du
after the year 1400. The princ
his life seem to be equally tinged
tainty. Leland, one of his biograph
sents him to have studied both at
and at Oxford, and at the latter pl
diligently frequented the public scho
putations, and even there to have
opinions of Wycliffe in religion.
doubts his having studied at either
He appears to have been entered at
Temple; but the evidence of this
rest simply upon the record of
Chaucer having been fined 2 shill
ing a Franciscan friar in Fleet stre
states that he engaged in the p
law, while Mr. Tyrwhitt conte
tirely. He had undoubtedly early
himself into the friendship of pers
tinction, was a page to King Edwar
for his good services was reward
monarch in 1367 with an annuity of
These facts are verified by public
appended to the biography by Go
appears afterward to have beco
of the bedchamber to the king,
was sent abroad as a royal envoy.
later he was sent to Genoa, with 2
bassadors, to negotiate for ships f
force; and it appears that his s
great as to win many proofs of
He was made on his return partial
of the customs of London, and was
to receive daily from the butler of
pitcher of wine. In 1377, he

acquaintance with the Roman classics; but it is impossible to ascertain the chronology of his works. He left by his wife 2 sons, Thomas and Lewis. The first was speaker of the house of commons in the reign of Henry IV., and was ambassador to France and Burgundy. Chaucer's principal biographers have been Leland, Speght, Tyrwhitt, and Godwin. Fault has been found with the work of the latter as being too voluminous, discursive, and conjectural (2 vols. 4to., London, 1803). An introductory discourse to Tyrwhitt's edition of the "Canterbury Tales" gives clear ideas of the language of the 14th century, and of Chaucer's peculiar mastery and use of it.

CHAUCI, one of the most powerful tribes of ancient Germany. They dwelt between the rivers Ems and Elbe, being divided by the Weser into *Majores*, W., and *Minores*, E. According to Tacitus, their country was extensive and thickly peopled. They were distinguished for their love of justice and of peace, powerful, but unambitious, never provoking war, but always ready to repel aggression. They were allies of the Romans in the war of Germanicus against the Cherusci, but subsequently their enemies in the reigns of Claudius and Nero. They are last mentioned in the 3d century as devastating Gaul. They were finally merged in the general name of Saxons.

CHAUDES-AIGUES (Lat. *Aquæ Calentes*), a canton and commune in the department of Cantal (Auvergne), France; pop. of the canton in 1856, 7,757, and of the town, 2,207. The town is situated in a narrow and picturesque gorge. It derives its name from some hot springs in its vicinity, which are extensively used for baths, for washing fleeces, and for warming the houses during the winter. The annual attendance of visitors is about 500. The spring called *Source du Par* is one of the hottest springs in Europe. Woollen goods and hosiery are manufactured in the town, and many of the inhabitants resort during the winter to Paris, to obtain employment.

CHAUDET, Antoine Denis, a French artist, born in Paris, March 31, 1763, died April 19, 1810. His statue of Œdipus, exhibited in 1801, established his reputation as a sculptor. Among his other works may be mentioned "Paul and Virginia," "Sensibility," "Surprise," the silver statue of "Peace" in the Tuileries, the "Napoleon" which previous to 1815 surmounted the column in the Place Vendôme, and the bass-relief of "Painting, Sculpture, and Architecture," in the Musée Napoleon. He excelled also as a painter and designer, and illustrated a number of works, of which the magnificent edition of Racine published by P. Didot affords an example. He officiated as professor of sculpture, and contributed many carefully written articles to the dictionary of the academy. In 1805 he was named a member of the section of fine arts of the institute. His works tended to modify the classicism which prevailed in the French schools of art in the beginning of the present century.—Jeanne Élisabeth Gabiou, wife of the preceding, born in 1767, died about 1830. A pupil of her husband, she painted a "Child teaching a Dog to read," and many charming little pictures of the kind, and excelled also as a portrait painter.

CHAUDIÈRE, a river of Canada East, rises near the boundary line between Canada and the United States, and flows into the St. Lawrence about 7 m. above Quebec. Its length is about 120 m., and its usual width is from 400 to 600 yards; but it is often contracted by rocks jutting from either side, which occasion violent rapids, and render the stream unnavigable. About 2½ m. from its mouth are the falls of the Chaudière, where the water, first contracted by salient points of rock, is then thrown over a precipice from a height of 100 feet. The scenery on the banks of this river is very diversified and picturesque.

CHAUDON, Esprit Joseph, a French author, born at Valensolle in 1738, died in 1800. After teaching the humanities in several colleges of the *oratoire*, he published in 1772, at Avignon, a valuable bibliographical work, entitled *Bibliothèque d'un homme de goût*, many materials of which were furnished by his brother, Louis Chaudon. In 1778 he published in Paris a *Dictionnaire interprète-manuel des noms Latins de la géographie ancienne et moderne*.—Louis Mayeul, a French author, brother of the preceding, born at Valensolle, May 20, 1737, died at Mezin, May 28, 1817. He studied in the colleges of Marseilles and Avignon, and entered the order of Benedictines. His principal work is a biographical dictionary, which was published at Avignon in 1766, and was designed to be equally removed from the prolixity of Moréri and the dryness of Ladvocat. It was the basis of the subsequent and distinct work of the abbé Feller. Chaudon also edited the *Dictionnaire anti-philosophique*, and for other works which he composed in defence of religion he received honorable briefs from Clement XIII. and Pius VI.

CHAUDWAR, a ruined city of Hindostan, in the province of Orissa, near Cuttack, of great antiquity. It covers a space several miles in extent, and comprises the remains of temples, reservoirs, and other buildings, of which however little more than the foundations remain visible.

CHAUFFEPIÉ, Jacques Georges de, a Protestant divine of Holland, of French origin, born in Leuwarden, Nov. 9, 1702, died in Amsterdam, July 3, 1786. He is principally known as the author of a highly esteemed work, entitled *Nouveau dictionnaire historique et critique, pour servir de supplément ou de continuation du dictionnaire historique et critique de M. Bayle* (Amsterdam, 1750–'56, 4 vols. folio).

CHAUFFEURS, or Garrotteurs, the name of brigands during the reign of terror in France. Their head-quarters were first in the forest of Orgères, near the city of Chartres, and afterward they infested other parts of the country in bands, organized under the leadership of Johann Bückler, surnamed Schinderhannes, until 1803, when the measures adopted under the consulate put a stop to their depredations. They garrotted their victims, tortured and burned (*chauffer*) their feet to make them disgorge their treasures. While engaged in burglaries they put a black veil over their face, or painted it with soot.

CHAULIAC, CAULIAC, or CHAULIEU, GUI DE, a French surgeon of the 14th century, studied at Montpellier and Bologna, practised his profession in Lyons, and was afterward employed by 3 popes of Avignon, Clement VI., Innocent VI., and Urban V. He is the author of a remarkable treatise on surgery, entitled *Inventarium, sive Collectorium Partis Chirurgicalis Medicinæ*, which was translated into French by Laurent Joubert, under the title of *Grande chirurgie*, and accompanied with annotations and an index by his son Isaac Joubert (Lyons, 1592, 8vo.). This was the first work of importance on the principles and practice of surgery published in Europe after the middle ages, and during 2 centuries it was considered the classical work on that branch of science. It is even now esteemed for its simplicity and clearness on many points which have been overloaded with theoretical explanations by some modern writers. Plasters and poultices, ointments and embrocations were almost the only resources of surgical practice in western Europe before the time of Chauliac. He reestablished the practice of such operations as had been described and performed by the ancient Greeks and the Arabian surgeons, invented several new instruments, and undertook certain operations on the crystalline lens, for the restoration of sight, in cases of cataract. He laid the foundations, in fact, of the modern principles and practice of surgery; and though his works are tinged with the astrological notions of the age in which he lived, they are replete with practical instruction. He also wrote a description of the plague which visited France in 1348, and by which he was himself attacked.

CHAULIEU, GUILLAUME AMFRYE DE, a French poet, born at Fontenay in 1639, died in Paris, June 27, 1720. By his associates he was called the Anacreon of France, and by Voltaire the first of neglected poets. The best edition of his works appeared in 1774, 2 vols. 8vo. His *Lettres inédites* were published in 1850.

CHAUMETTE, PIERRE GASPARD, a French terrorist, born at Nevers, May 24, 1763, guillotined in Paris, April 13, 1794. He made himself conspicuous as a journalist and popular orator on the outbreak of the revolution, contributed much to the establishment of the municipal government in Paris (Aug. 10, 1792), officiated as one of its principal functionaries, adopted the name Anaxagoras, was the great chief of the formidable Hebertists, took a part in the establishment of the so-called *fêtes de la raison* and in the destruction of works of art, and after having done as much as he could to pander to the most abominable passions of the reign of terror, was himself finally executed.

CHAUMONOT, or CHAUMONNOT, PIERRE MARIE JOSEPH, a French Jesuit, born near Châtillon-sur-Seine in 1611, died at Lorette, near Quebec, Canada E., Feb. 21, 1693. His early life gave little promise of future piety. After robbing an uncle who directed his education, he went to Rome, where he entered the society of Jesus under an assumed character. He soon repented of his faults, and after being ordained priest was sent at his own request as a missionary to the North American Indians. In company with Father Poncet he landed at Quebec in 1639, and devoted himself to the instruction of the Hurons, Petuns, and Neutrals. He resided among these tribes until the Hurons were dispersed by the Iroquois, when he accompanied a small body of fugitives to Quebec in 1650. In the following year he removed with the Hurons to Isle Orleans, where a Christian settlement was formed. In 1655 he visited the Onondagas, but returned to his flock in 1658, and was instrumental in founding the mission of Notre Dame de Foye, 5 miles from Quebec. This establishment was removed to Lorette in 1693, and soon after Father Chaumonot closed his career after more than half a century of hardships. He left an excellent grammar of the Huron tongue, published by the literary and historical society of Quebec in 1835; a list of radical and derivative words, a catechism, and a series of instructions, all in the same language, and a memoir of his own life addressed to his superior. These last have not been published.

CHAUMONT, or CHAUMONT-EN-BASSIGNY, an arrondissement and town of France, in the department of Haute-Marne (Champagne); pop. of the former in 1856, 85,990, and of the latter 9,263. The arrondissement is divided into 10 cantons, and possesses 202,000 acres in grain, 9,500 in vines, 17,000 in various crops, 39,000 in natural and artificial meadow, 71,000 of fallow land, and 203,000 in forest.—The town has a public library, manufactories of woollens, linen and cotton yarn, and a considerable trade in iron wares. The allied powers concluded a treaty here against Napoleon, March 1, 1814, which afterward became the basis of the holy alliance.

CHAUNCEY, ISAAC, a commodore in the American navy, born at Black Rock, Conn., Feb. 20, 1772, died in Washington, Jan. 27, 1840. He commenced his career in the merchant service, in which he became distinguished for seamanship, enterprise, and energy. It is related of him that in one of his voyages, when still a youth, the crew of the ship in which he was employed were visited by mortal sickness, and in a short time he was the sole survivor on board; and that he managed, single-handed, to carry the ship safely into port, for which achievement it is believed he was appointed to the command of her. He entered the navy as lieutenant in 1799, and early in 1802 was appointed acting captain of the frigate Chesapeake, of 38 guns, the flag ship of a squadron of 6 sail ordered to the Mediterranean, under the command of Commodore Valentine Morris, to operate against Tripoli. He served actively in this command during a large part of the war with Tripoli, and also in the squadrons of Commodores Preble and Rodgers, in command of the John Adáms, of 28 guns. In the brilliant operations before Tripoli, in 1804, he bore a distinguished part. In that year the grade of master commandant (now commander) was reëstablished in the navy, and he was one of 8 lieutenants promoted to it. In April, 1806, he was promoted to the rank of captain. In the war of 1812 the naval superiority on the lakes became an object of high importance, and Commodore Chauncey, then in command of the navy yard at New York, was appointed to command on all the lakes except Champlain. On Oct. 6, 1812, he arrived at Sackett's Harbor, and entered upon his important duties. The late Henry Eckford was appointed naval constructor at Sackett's Harbor, to which place large bodies of ship carpenters were sent, and vessels were built and equipped from that time until the close of the war, with a rapidity which has perhaps never been equalled. The Mohawk, a frigate of 42 guns, was launched in 34 days from the time her keel was laid; and the Madison, a corvette of 24 32-lb. carronades, was launched in 9 weeks from the day when the first tree which entered her frame was taken from the forest. All the operations on shore were supervised by Chauncey, who at the same time had to command his squadron, and watch an active and enterprising enemy. Naval superiority on the lakes was as important to the English as to the Americans, and Captain Sir James Lucas Yeo, an officer of high reputation for spirit and conduct, was appointed to command the British naval forces on those waters, at about the same time that Chauncey received his appointment. On Nov. 8, 1812, Commodore Chauncey appeared on Lake Ontario for the first time, the Oneida brig of 16 guns bearing his pennant, and his squadron, or rather flotilla, consisting of 7 small vessels. His particular object in going out was to intercept some of the enemy's transports. A few hours after leaving Sackett's Harbor, the enemy's principal ship, the Royal George, was discovered and chase given to her. The next morning the Royal George ran into the harbor of Kingston, Chauncey's flotilla pursuing her with the utmost audacity into the deepest part of the bay, where she was made fast to a wharf, and deserted by a portion of her crew. The flotilla now maintained a spirited action for half an hour with the ship and 5 shore batteries, when, as the enemy proved much stronger than had been anticipated, Chauncey hauled off. The loss on the American side was slight, while it was evident that the enemy suffered materially. From this time until December, when the navigation of the lake closed, the squadron was constantly employed, cruising most of the time off Kingston. Ship-building was prosecuted very actively by both parties during the winter of 1812–'13, but by the enemy under superior advantages. The American side of the frontier was but little better than a wilderness; the roads were very imperfect, and in spring hardly passable. Consequently the transportation of supplies was extremely slow and difficult, and seamen brought from the sea-coast to the lakes contracted debilitating fevers, which were much aggravated by the want of proper quarters to receive them. In addition to these embarrassments, the public credit was much impaired, and Chauncey's operations were carried on by means of a depreciated currency. On April 25, 1813, the navigation of the lakes was considered safe, and the squadron, now consisting of 18 sail, went out, carrying a detachment of 1,700 soldiers, commanded by Gen. Pike. Chauncey's pennant was now borne by the Madison, a sloop of war of 24 guns, which had been built and equipped during the winter. The squadron anchored on the same day off York (now Toronto), the capital of Upper Canada, and the troops were landed in 2 hours, without material loss, the movement being covered by the fire of the vessels. The troops immediately moved to the assault, the squadron engaged the batteries, and the place soon surrendered. Gen. Pike was killed by an explosion, and the squadron suffered considerable loss. Chauncey's gallantry on this day was very conspicuous. He directed the movements of the squadron in person, pulling in his boat from vessel to vessel under the enemy's fire. The capture of York was attended with many important results. A vessel of 20 guns, on the stocks and nearly finished, was burned, a large amount of military and naval stores were destroyed, and a considerable quantity was saved and shipped to Sackett's Harbor. The place remained in possession of the Americans until May 1, when it was evacuated. On May 27 the squadron again coöperated with the land forces in the capture of Fort George, a very important post, which could not have been taken without naval aid. This event brought about an evacuation by the British of the whole Niagara frontier. During the whole of the summer of 1813 Commodore Chauncey was incessantly occupied in watching the enemy, and urging forward the ship-building at Sackett's Harbor. He had now 14 sail of vessels, 2 only of which, the Madison and Oneida, were suited to close action. A large corvette called the Pike, pierced for 26 long 24s, was commenced April 9, launched June 12, and early in August added to the squadron. On Sept. 7, while at anchor off the mouth of the Niagara river, the enemy's squadron, consisting of 6 sail, was discovered about 6 m. distant. Chase was immediately given, and for 6 days the American squadron followed the English, endeavoring to bring it to action without success. On the 11th a partial engagement children of non-communicants. II. Charles, a minister of Boston, and a descendant of the preceding, born Jan. 1, 1705, died Feb. 10, 1787. He graduated at Harvard college in 1721, and was ordained pastor of the 1st church in Boston in 1727, as the colleague of Mr. Foxcroft. He was a copious writer, and published many works; among the rest, a "Complete View of the Episcopacy," being the substance of a discussion with Dr. Chandler, of New Jersey; "Seasonable Thoughts on the State of Religion in New England;" "Discourse on Enthusiasm;" "Remarks on the Bishop of Llandaff's Sermon;" "Mystery hid from Ages, or the Salvation of all Men;" "The Benevolence of the Deity." He was for 60 years the minister of one parish. III. Charles, judge of the supreme court of Connecticut, born at Durham, Conn., May 30, 1747, died in New Haven, April 28, 1823. He was admitted to the bar in 1768, removed to New Haven, was made attorney for the state of Connecticut in 1776, and judge of the superior court in 1789. He retired to private life in 1793. He was not college bred, but was a good scholar and a clear-headed man. He taught jurisprudence for 40 years. IV. Charles, eldest son of the preceding, also a lawyer, born in New Haven, Aug. 17, 1777, died Aug. 30, 1849. He removed to Philadelphia after completing his studies, and was admitted to the bar in 1799, where he soon held a divided honor of precedence with John Sargeant and Horace Binney. The various honors of state and judiciary which were tendered to him he declined. He was a man of great erudition, especially in his profession, of winning manners and unimpeachable integrity.

CHAUNY, a town of France, department of Aisne, partly built on an island in the river Oise, which is here connected with the canal of St. Quentin, situated on the Northern railroad from Paris to Cologne, distant from the former 88½ m. by rail; pop. 6,290. The town derives its principal commercial importance from the glass works of St. Gobain, which are about 7 m. distant.

CHAUSSEY, the largest of a group of small rocky islands in the English channel, opposite Granville and about 7 m. from the coast of France. It belongs to the French department of Manche, and is valuable for quarries of granite, which has been used for all the works about the harbors of Granville and St. Malo. There is no permanent population, but it is inhabited in summer by quarrymen. It is overrun by immense numbers of rabbits. The name of Chaussey islands is sometimes applied to the whole group.

CHAUTAUQUE, the westernmost co. of N. Y., bounded on the N. W. by Lake Erie, and on the W. and S. by Pennsylvania; area, about 1,000 sq. m.; pop. in 1855, 53,380. It is well supplied with water power, and drained by Conewango creek, its tributaries, and several other smaller streams. Chautauque ridge passes through the county. Between this ridge and the lake, a distance of from 8 to 10 miles, the surface is nearly level, and the soil very fertile. The country around the streams is also extremely productive. The productions in 1855 were 144,886 bushels of wheat, 558,507 of Indian corn, 539,763 of oats, 282,451 of potatoes, 105,672 tons of hay, 8,389,837 lbs. of butter, and 1,198,361 of cheese. There were 184 saw, 10 shingle, and 2 planing mills, 31 grist mills, 1 oil mill, 7 manufactories of agricultural implements, 8 of edged tools, 1 of musical instruments, 8 woollen factories, 7 furnaces, 25 tanneries, 8 brick yards, 298 school houses, 9 newspaper offices, and 105 churches. Iron ore, marble, and sulphur springs have been found in several places. There are springs emitting carburetted hydrogen, and the gas from one of these, near Fredonia, has been successfully employed in lighting the houses of the village. The New York and Erie railroad, and the railroad connecting Buffalo with Erie, traverse the county. By means of Conewango creek, which falls into the Alleghany, a branch of the Ohio, there is a boat navigation from the gulf of Mexico to within 10 m. of Lake Erie. Capital, Maysville.

CHAUTAUQUE LAKE, a beautiful sheet of water in the centre of Chautauque co., N. Y., 18 m. long, and from 1 to 3 m. wide. It is said to be the highest navigable water on the continent, being 1,290 feet above the Atlantic, and 730 feet above Lake Erie. Its outlet, which is navigable by small boats, opens into Alleghany river. The name is a corruption of an Indian phrase signifying a "foggy place," and was given in consequence of the mists which frequently rise from the surface of the lake.

CHAUVEAU-LAGARDE, Claude François, a French advocate, born at Chartres, Jan. 21, 1756, died in Paris, Feb. 29, 1841. He officiated as advocate of Miranda, Brissot, Charlotte Corday, Marie Antoinette, and Madame Élisabeth. Soon after the condemnation of the queen, he was arrested, and was not liberated until after the fall of Robespierre. He was advocate to the council of state under Napoleon, and was appointed to congratulate Louis XVIII. on his entrance into the capital. After the second restoration he devoted his talents to the defence of the proscribed.

CHAUX-DE-FOND, La, a district in the Swiss canton of Neufchâtel; pop. 17,250. The principal place is the borough of the same name, the largest borough in Switzerland; pop. increased from 6,500 in 1834 to 12,638 in 1850, and estimated at 14,000 in 1858. It is a large scattered locality, resembling an assemblage of farm houses and hamlets, a garden plot surrounding every cottage. It is situated 19 m. from Neufchâtel, in a rugged and narrow valley of the Jura, at an elevation of about 3,000 feet above the level of the sea. Great prosperity prevails among the inhabitants, mainly owing to the manufacture of watches and of mechanical instruments, for which the place is celebrated. The origin of this industry is traced to the end of the 17th century. The total number of gold and silver watches made in 1774 in La Chaux-de-Fond and the neighboring town, Locle, was 800. In 1836, the former town alone produced 108,295, and in 1851, 156,122; while Locle produced in the latter year 83,683. About 12,000 persons are engaged in this occupation in both places and the neighboring country; the wages vary from 80 cents to $2 a day. The inhabitants excel also in carving, jewelry, and enamelling, and in various other arts of the same kind, and at the same time in the manufacture of chemical, mathematical, and surgical instruments, and of lace. The painter Leopold Robert, and the mechanicians Droz (father and son), were born at La Chaux-de-Fond. The place is reached in 5 hours by diligence from Neufchâtel. There are 2 subterranean mills here, turned by the stream of the valley previous to its sinking underground.

CHAVES (anc. *Aquæ Flaviæ*), a town of the province of Tras-os-Montes, Portugal; pop. 6,000. The fortifications which once defended it are now in ruins. It is situated on the Tamega river, here crossed by a Roman bridge of 18 arches, and has hot saline springs and baths. It has an interesting church, the burial place of Alfonso I., duke of Braganza. In 1811, after a violent conflict, Soult obtained possession of the place; and after the defeat of the Cartistas (Sept. 18, 1837), the famous convention of Chaves was signed here.

CHAVES, Emanuel de Silveyra Pinto de Fonseca, count of Amarante and marquis, a Portuguese general and statesman, born at Villa Real, in the province of Tras-os-Montes, died in Lisbon, March 7, 1830. He was opposed to the Portuguese liberals, and on the arrival of the duke of Angoulême in Spain in 1823, he raised the standard of revolution in Portugal in favor of Dom Miguel and absolutism. He was proclaimed a traitor, and being defeated by Gen. Riego, he retired into Spain. There he continued to carry on his intrigues, and when Dom Miguel was proclaimed king he returned to Lisbon. He performed a conspicuous part in the continual disturbances which followed, and in the alternating successes of the contest underwent the vicissitudes of return and exile, always retreating after his numerous defeats over the Spanish frontier. To put an end to the intrigues of the Portuguese refugees with the Spanish court, the English, who were favorable to the constitutional cause in Portugal, declared that any participation in the struggle by the Spanish authority would be regarded as a *casus belli.* To avoid this risk, the marquis de Chaves was sent away from the frontier. Subsequently, when Dom Miguel was acknowledged as regent, Feb. 1828, Chaves returned to Portugal and assisted the usurper in seizing the crown for himself. This accomplished, Chaves was neglected, and soon afterward retired from court, disgusted with the ingratitude of Dom Miguel; and the latter part of his life was spent in gloom and obscurity, still more saddened by partial insanity. The marchioness of Chaves was an accomplished virago, and many romantic stories are told of her intrepidity and skill with the poniard and pistol.

CHAYENPOOR, or Chayanpoor, a fortified town of India, in the native state of Nepaul, 115 m. E. of Khatmandoo. It is an entrepot for the commerce between Thibet and Hindostan, beside having considerable trade of its own with the former country. The exports are rice, wheat, oil, ghee (a preparation of butter), sugar, spices, tobacco, cotton and woollen goods, timber, metals, and pearls; the imports are gold, silver, Chinese wares, salt, musk, and skins. The town is the capital of a district of its own name.—There is a place called Chayanapoor in the same state, 50 m. S. E. of Khatmandoo.

CHAZELLES, Jean Matthieu de, a French mathematician, born in Lyons, July 24, 1657, died Jan. 16, 1710, was hydrographic professor for the galleys of Marseilles, and in a voyage to Egypt, while surveying the Mediterranean, he discovered, as he thought, that the angles of the pyramids were turned to the cardinal points.

CHEAT RIVER, in Virginia, is formed by the union of the Laurel, Glade, Shaver's, and Dry forks, which rise among the Alleghany mountains, near the N. border of Pocahontas co., and meet in Randolph co. It flows N. and N. W. through a hilly country, well adapted to grazing, and rich in coal and iron, and falls into the Monongahela at the S. W. extremity of Fayette co., Penn. It furnishes fine water power, and is navigable 40 m. above Rowlesburg, but not in the lower part of its course.

CHEBOYGAN, an extreme N. co. of the lower peninsula of Michigan, bordering on the straits of Mackinaw and Lake Huron; area, about 500 sq. m. It was organized in 1851, and has few inhabitants.

CHECO, a village of Chili, in the province of Coquimbo. In its vicinity are copper mines, which formerly yielded annually 12,000 quintals of ore, containing 70 per cent. of metal.

CHÉDOTEL, a Norman navigator, the dates of whose birth and death are unknown. He was selected in 1598 to guide the expedition conducted by the marquis de La Roche into Nouvelle France. Leaving 50 men, most of them taken from the prisons of France, on Sable island, he proceeded to examine the coast of Acadia or Canada. Being prevented by stress of weather from landing at the island on his return, the men remained there for 7 years, leading the life of savages. In 1605 Chédotel went to seek for them by the direction of the parliament of Rouen, and recovered 12, all that remained, who were liberally provided for on their arrival by Henry IV.

CHEDUBA, an island in the bay of Bengal belonging to the administrative district of Ramree; area, about 250 sq. m.; pop. about 9,000, mostly Mughs. It was first occupied by the English in 1824. The channel between it and the mainland is navigable for small vessels. Copper, iron, and silver have been found in this island, and it affords indications of extinct volcanoes. It produces petroleum oil of excellent quality, and also rice, tobacco, pepper, sugar, cotton, hemp, and indigo.

CHEESE, the curd of milk separated from the whey, and compressed into solid masses of various forms. It consists of the caseine and buttery parts of the milk, and water, as the 3 principal ingredients, and a small amount of solid saline matter or ash, partly derived from the salt used in seasoning, amounting to from 3 to 6 per cent. The water varies from 36 to 45 per cent., the caseine from 25 to 33 per cent., and the fat from 22 to 32 per cent. These differences are in part owing to the different feed of the cows, in part to the different mixtures of cream and milk made use of for obtaining the curd, and in part to the different methods and degrees of care adopted. Each district has its peculiarities in these respects, and the cheeses of each may readily be distinguished by their peculiar properties. Cheese, like the Neufchâtel, made from cream alone, is rich in the buttery part of the milk, but is a delicacy that will not keep. That made from skim milk is deficient in this ingredient, and may not contain 6 per cent. of fat; while cheese made from buttermilk must be still more deficient in it. The composition of cheese is very similar to that of flesh, the caseine representing the lean, and the buttery matter the fat portion. Caseine is an albuminous substance which coagulates in the presence of an acid, and separates from the serum or whey of the milk. To effect this separation is the first process in making cheese. Other substances produce the same effect as an acid, as a prepared pure curd recommended by Prof. Johnston, old cheese, the first extract of malt and sour leaven, and the fluids of the stomach. In the best Holland cheese, called Gouda, hydrochloric acid is used, and the cheese is said never to be infested with mites. The substance called rennet is generally made use of for this purpose; and that is preferred which is made from the stomach bags of calves or pigs that have been fed upon milk alone. These are salted, dried, and kept for some time before using. When required, the new-made brine of the rennet, sometimes prepared with spices, is added to the milk. Some portion of soluble membrane thus introduced converts the sugar of the milk into lactic acid, and this soon acts upon the caseine to curdle it, and cause its separation in a solid form. This may be completed in from half an hour to 2 hours. No more than just enough of the infusion of rennet must be added to the milk, and this must be of the proper temperature, which is from 80° to 85° F. After the coagulation the curd is broken up in the vessel. A portion of whey is sometimes drawn off and heated, and enough added to bring up the whole to 85°; and this is several times repeated, after as many very careful and thorough breakings up of the curd with instruments prepared for the purpose, the temperature, at the last, being raised to 100°. The mixture is then allowed to settle, and the whey is entirely drawn off from the curd. This, after the whey has drained off, is enclosed in a linen cloth and put into the press vats or moulds, care being taken that its temperature has first fallen to about 60°. These are strong tubs, generally made of thick elm staves, hooped with iron, and a little deeper than the intended thickness of the cheese. The bottom is perforated with holes for the escape of the expressed whey. The mould containing the curd is then placed under the press, and after being in an hour or more is taken out and turned over, and furnished with a clean cloth in place of the one already used. Some persons at this time break up the curd in a mill and introduce the salt required, which may be about one fortieth of the weight of the curd. Others rub in the salt upon the outside as the cheese is occasionally taken out of the press and put in again. It requires this attention for 12 hours, and is then left in the press for 12 hours more, or until the press is wanted for the curd of the succeeding day. From the press the cheese is carried to the cheese room, where it is placed upon a shelf, and every day for some time is turned once, and afterward less frequently, until it is ripe for the market. Large and rich cheeses sometimes require to be bound together with strong linen cloths to prevent their bursting in the drying process. The temperature of the cheese room should be kept at about 60°, and light and currents of air should be excluded from it. While drying, cheeses are in some places dipped occasionally into hot water, which is supposed to hasten the hardening of the rind, and also the internal fermentation. Color is imparted by saffron and annatto by many makers; but the best cheeses need no such coloring matters, and as the use of the latter ingredient has, by its adulteration with red lead, rendered cheese poisonous, it had far better be left out; it has no beneficial properties whatever to recommend its continued use. A decoction of sage leaves, marigold, parsley, or other herbs, is also sometimes mixed with the milk, according to the fancy of different makers, with a view of improving the flavor or appearance of the cheese. The celebrated Westphalia cheese is said to derive its flavor from the curd being allowed to become putrid before it is compressed. —The size of cheeses varies in different places, for the most part according to the quantity of milk that can conveniently be had every 12 hours, it being often the practice to keep the milk or the cream of the evening milking, and add to the milk of the morning. Where the manufacture is carried on upon a large scale, as in Cheshire, Eng., the cheeses weigh from 100 to 200 lbs. each. For curiosities they have, in a few instances, in the United States, been made of extraordinary dimensions. From 20 to 60 lbs. are common sizes.—The proportion of cheese obtained from milk is very variable, changing with the seasons and the weather, as well as with the quality of the cwt. Entered for home consumption in the respective periods, 196,358 cwt. and 200,248 cwt. The exports of foreign cheese during the same period of 1858 were 3,430 cwt., and of English cheese 11,121 cwt., total 14,551 cwt.; and in the preceding year, foreign cheese, 6,062 cwt., and English cheese, 15,933 cwt.; total, 21,995 cwt. The value of the imports into France in 1856 was $1,500,000. We have no account of the exports; in previous years they were to the extent of about $400,000. The value of the cheese taken for home consumption in Belgium in 1856 was $220,000, and the exports of Belgian cheese amounted to $100,000. The most active trade in cheese is carried on in Holland, Holstein, Styria, Tyrol, Bohemia, Hungary, Switzerland, Greece, Italy, England, and the United States.

CHEESHAHTEAUMUCK, Caleb, an Indian graduate of Harvard college (1665), born in 1646, died at Charlestown, Mass., in 1666. He was the only Indian who ever graduated from that college.

CHEEVER, Ezekiel, the patriarch of New England schoolmasters, born in London, the son of a linen draper, Jan. 25, 1615, died in Boston, Aug. 21, 1708. The pure Latinity of some essays and verses written by him in 1631, and which are still extant among his manuscripts, furnishes conclusive evidence that he had enjoyed superior opportunities of classical training. He came to America in 1637, landing at Boston, but in the following year accompanied his friends Davenport and Eaton to Quinnipiac, where he assisted them in founding the colony of New Haven. His name appears on the plantation covenant in June, 1639. He was chosen one of the deacons of the church soon after its organization, occasionally officiating as a preacher. He taught a public school there, from the foundation of the colony in 1638 until 1650, beginning with their common or free school, and on the organization of a school of higher grade, taking charge of that. He also represented the town in the general assembly in 1646. In 1650 he removed to Ipswich, Mass., and took charge of the grammar school there, in which he remained for 11 years. In 1661 he removed to Charlestown, where a town free school had been established and endowed by certain rents and the products of fisheries, together with a fixed annual tax on the property of the town. There he remained 9 years, teaching with great success. In 1670 he was called to Boston to take charge of the free school, now known as the Latin school. In this invitation the governor, magistrates, clergymen, and selectmen of Boston united. His salary was to be £60 per annum from the town treasury, the income of some property belonging to the school, and the use of the school house rent free. He remained at the head of this school for 38 years, and died at the age of 94, "retaining," says Cotton Mather, who preached his funeral sermon, "his abilities, in an unusual degree, to the very last, his intellectual force as little abated as his natural." While teaching at New Haven Mr. Cheever prepared the "Accidence, a short Introduction to the Latin Tongue," which in 1785 had run through 20 editions, and was for more than a century the hand-book of the Latin scholars of New England. He was also the author of a little treatise entitled "Scripture Prophecies Explained, in three short Essays."

CHEEVER, George Barrell, D.D., an American clergyman and author, born at Hallowell, Me., in 1807. He graduated at Bowdoin college in 1825, at the Andover theological seminary in 1830, and was ordained pastor of the Howard street Congregational church at Salem, Mass., in 1832. While at Andover and Salem he contributed in prose and verse, on literary and theological topics, to the "North American Review," "Biblical Repository," and other periodicals. He engaged in the Unitarian controversy, in connection with which he wrote a defence of the orthodoxy of Cudworth. Espousing the temperance cause, he published in a Salem newspaper, in 1835, a dream entitled "Deacon Giles's Distillery," in which the liquors were graphically characterized as containing demons in an *inferno*. Deacon Giles was a veritable person, and the publication resulted in a riotous attack upon Mr. Cheever in the street, his trial and conviction for libel, and his imprisonment for 30 days in the Salem jail. He resigned his pastorate in the next summer, and passed the following 2½ years in Europe and the Levant, contributing letters to the "New York Observer." On his return in 1839 he became pastor of the Allen street Presbyterian church, in the city of New York. He soon after delivered to crowded audiences his lectures on the "Pilgrim's Progress," and on "Hierarchical Despotism," the latter being in answer to a discourse of the Rev. Dr. Hughes, the Roman Catholic bishop of New York. In 1843, in three public debates with J. L. O'Sullivan, Esq., in the Broadway tabernacle, he maintained the argument for capital punishment. He went again to Europe in 1844, as corresponding editor of the "New York Evangelist," of which journal he was principal editor for a year after his return, in 1845. In 1846 he was installed over the new Congregational church of the Puritans, in New York city; a church organized with the view of securing his ministrations, and of which he has remained the pastor. He is distinguished as an energetic preacher, and for his Puritanic application of biblical principles to human conduct and institutions. Among the topics which he has treated in the pulpit are intemperance, Sabbath-breaking by railroad corporations and government orders, the attempted ejection of the Bible from public schools, the Mexican war, the fugitive slave law, the Dred Scott decision, and the system of American slavery. Since the establishment of the "New York Independent" in 1848, Dr. Cheever has been a weekly contributor to it of religious, literary, critical, and political articles. His later contributions to the "Bibliotheca Sacra" are of a more scholarly and elaborate character.

but for about 30 years it has been in charge of a corporation. The boats run from the foot of Winnisimmet street, Chelsea, to the foot of Hanover street, Boston. The distance is about 1¼ m., the way lying across the north side of Boston harbor, which is formed by the confluence of Charles and Mystic rivers. The annual number of passengers by the ferry is 2,000,000. The Cary improvement company, chartered in 1852, has expended large sums of money in laying out streets, &c.

CHELSEA, an extensive parish on the left bank of the Thames, formerly a village about 2 m. from London, but now a portion of its suburbs, belonging to the county of Middlesex, and constituting a part of the hundred of Ossulston; pop. of Chelsea district in 1851, 56,538. It derives interest from the celebrated military asylum for invalid soldiers known as Chelsea hospital, erected here by Sir Christopher Wren in the reign of Charles II., who laid its foundation stone, Feb. 16, 1682. It was completed in 1690 at an expense of £150,000. It accommodates upward of 500 resident pensioners, beside whom there is a large body of out-pensioners. The body of the duke of Wellington lay in state in Chelsea hospital for a few days previous to the funeral (Nov. 18, 1852). There is also a royal military school for the support and education of children of soldiers (especially orphans). The steamboat traffic in Chelsea is accommodated by 3 piers. The sum granted in 1857 by the government for the new Chelsea bridge was £24,000. Cremorne gardens in Chelsea are a favorite popular resort.

CHELTENHAM, an English market town in Gloucestershire, celebrated as a fashionable watering place, distant from London by the Great Western railway 121 m., and delightfully situated on the river Chelt, which flows into the Severn; lat. 51° 54′ N., long. 2° 4′ W.; pop. in 1851, 35,051. It lies in an extensive valley open to the S. and W., but sheltered on other points of the compass by an amphitheatre formed by the Malvern, Cotswold, and Leckhampton hills. The town itself has no manufactures, and but little trade beyond supplying the wealthy invalids who make it their residence, and whose houses and villas adorn the suburbs and surrounding country. The place possesses the usual attributes of a fashionable resort: assembly rooms, theatre, reading and billiard rooms, club house, literary and philosophic institute, horticultural and choral societies, cricket ground, race course, &c. The parochial church of St. Mary's is an ancient Gothic structure, in the decorated style, cruciform in shape, with a tower rising from the intersection of the cross, and with a lofty octagonal spire containing a peal of 8 bells. The other churches of the established faith are Christ church, a modern edifice containing accommodation for 2,000 worshippers, and with a spire 174 feet in height, St. Peter's, in the Norman style, Trinity, St. John's, St. James's, St. Paul's, and St. Philip's. Eleven other religious denominations have places of worship. Cheltenham proprietary college was erected in 1843, and is attended by over 400 students. The college building is an imposing specimen of the Tudor collegiate style, with a frontage of 240 feet. The free grammar school, which was founded in 1578, educates about 175 pupils, and possesses 10 scholarships and exhibitions at Oxford university. A training school for the education of school teachers of both sexes, of the church of England, has about 180 under instruction. Cheltenham has also 13 public schools, beside several private educational establishments. The benevolent institutions comprise a hospital, infirmary, dispensary, almshouses, with many minor charities. There are 4 springs: the Royal old well, Montpelier spa, Pittville spa, and Cambray spa, with numerous baths. The water is a saline acidulous chalybeate, its main constituents being chloride of sodium, sulphate of soda, sulphate of magnesia, carbonic acid, and carbonate of iron, and is esteemed in bilious ailments. The first spring was discovered in 1716. Cheltenham returns 1 member to parliament.

CHEMISTRY, a science which investigates the composition and certain properties of material substances. Nothing is with certainty known of the derivation of the term, most probably from Χημεια (*Chemia*), the original name of Egypt, in which country it is supposed to have originated; hence it was called the Egyptian art. The oldest author who mentions it is Julius Maternus Firmicus, in the reign of Constantine, about A. D. 340. Suidas in his lexicon (A. D. 1100) defines it as the making of gold and silver; Libavius, in 1595, as the art of making chemical preparations and of extracting the pure essences in a separate form from mixtures; Lemery, in 1675, as the art which treats of separating the different substances which occur in mixtures; Bergman, in the latter part of the 18th century, as the science which investigates the components of bodies in regard to their nature, their properties, and the manner in which they are combined; Macquer, at about the same time, as the science which makes known to us the nature and properties of all bodies by composing and decomposing them. To the last 2 definitions, which express quite fully the ideas of chemists of the present day, may be added that of Berzelius: "Nature is composed of certain elementary bodies or elements. The knowledge of these bodies, of their mutual combinations, of the forces by which these combinations are brought about, and of the laws in accordance with which these forces act, constitutes chemistry."—Chemistry is often incorrectly spoken of as a science of entirely recent origin. This view may be, however, readily disproved. It would be impossible to determine at what exact period it became so far developed as to deserve the name of science. Many chemical facts must have been known from the earliest times. As far back as history goes they are treated of. Only by the gradual collection and explanation of

Geber, who refers it to the ancients. It experienced but slight alteration till toward the end of the alchemical period, when the idea of salt was added to those of mercury and sulphur. Among the Arabians, physicians were the principal chemists, many of them being highly scientific men. The writings of Geber, in the latter half of the 8th century, indicate the amount of chemical knowledge which they then possessed. He describes the metals very accurately, and mentions the different degrees of affinity which mercury has for gold, silver, lead, tin, and copper. He knew how to convert metals into oxides by means of heat, and how to purify native sulphur by solution in alkaline lye, and reprecipitation by vinegar. Several metallic sulphides were also known to him, as well as the fact that metals increase in weight and change color when heated with sulphur. The Arabians, unlike some of their predecessors, did not consider simple change of color in a metal to be transmutation. They demanded an entire change of its properties—that it should be made like some other metal. Transmutation was regarded by them in the light of a scientific problem as yet unsolved. Their knowledge of salts was comparatively extensive, alum, saltpetre, sal ammoniac, and green vitriol being accurately described. The carbonates of the fixed alkalies, and the use of lime to render them caustic; the preparation of sulphuric acid by the distillation of alum; of nitric acid by the distillation of saltpetre and green vitriol; the preparation of strong acetic acid from vinegar, and of *aqua regia* from nitric acid and sal ammoniac, are all described by Geber. By means of the acids thus obtained, artificial salts were prepared, as nitrate of silver and bichloride of mercury; gold was also dissolved. They purified their preparations by distillation, by recrystallization, and by sublimation. The purification of the noble metals by cupellation, the use of the water bath, and processes of filtration, were also known. Several words still in common use, as alkali, alcohol, &c., originated with them. Geber himself published a special work on the construction of chemical furnaces.—The importance of the Arabians as chemists ceased with the 12th century; not, however, before they had awakened in other nations an enthusiasm for the science. During the 13th century it had spread over the greater part of northwestern Europe. The views of Albertus Magnus, who flourished in Germany during the 13th century, will serve as an example of those of his day. Believing fully in the transmutation of metals, he considered it easier to convert them into each other when their properties are analogous. Thus gold can be more readily made from silver than from any other metal, for the mixture of which it is composed is very similar to that which forms silver. Indeed, it would only be necessary to change the color and weight of the latter, in order to obtain gold. He admits that different species of bodies cannot be converted one into the other. The metals, however, he regarded as mere varieties of one and the same species, being all composed alike. His views concerning this composition are essentially the same as those of Geber, but he believed that, beside sulphur and mercury, the metals must contain water, to the cold of which their solidity is due, seemingly mingling a portion of Aristotle's doctrine with that of Geber. The knowledge of practical chemistry detailed in his works is in advance of that possessed by Geber. For example, he describes the separation of silver from gold by means of nitric acid; a method of preparing metallic arsenic; and observed that sulphur attacks all metals, except gold, when heated with them. Contemporary with Albertus lived Roger Bacon, a most able diffuser and promoter of chemical science. At the same time, Raymond Lully made many new and important observations, but introduced an obscure style of writing, and fell into many absurdities, like those which soon became characteristic of alchemy. The transmutation of metals was now no longer spoken of as a possibility, but as a well established fact. In the 14th century, alchemy had become diffused over the greater part of the civilized world. It was, however, especially among the priesthood that its followers were to be found, in spite of its prohibition by a bull of Pope John XXII., in 1317. In the latter part of the 15th century flourished Basil Valentine. In addition to the elements, sulphur and mercury, of the earlier alchemists, he mentions salt. From these 3 substances he supposes that not only metals but all substances are composed. He first clearly described bismuth and zinc; prepared antimony and several new salts; also muriatic acid, by distilling common salt with green vitriol. He knew how to precipitate copper from its solutions by means of iron, also gold by means of mercury, and had much general knowledge of precipitation. With him qualitative analysis first appears. He detected iron in many specimens of hard tin, copper in the brittle iron of Hungary, and silver in the copper from Mansfeld. He explains how a similar occurrence of the noble metals in the base metals of commerce may have given rise to many of the so-called transmutations of false alchemists.—The great impulse given to all branches of learning by the remarkable events of the 15th century had its effect on chemistry. The overthrow of the Byzantine empire, which scattered many of its learned men over western Europe; the discovery of printing; and, above all, the growing tendency of men to think for themselves, were of peculiar importance to it. The implicit confidence hitherto placed in every noted authority began to diminish, and their theories to be questioned. The ground was made ready for a new system. This was inaugurated by Paracelsus, in the first quarter of the 16th century. It fills a well defined period in chemical history, enduring until the middle of the 17th century. The views regarding the transmutation of met-common use; for example, the detection of ammonia by adding lime to the matter containing it, and observing the fumes that are formed in presence of an acid; also the detection of silver by muriatic acid. He likewise made many observations on affinity. Nicholas Lemery (1645–1715), a famous lecturer at Paris, deserves mention for his efforts in the diffusion of chemical knowledge. As a clear and systematic writer, he was justly celebrated.—Another modification of views regarding the elements, which exerted great influence, was expressed by Becher (1625–1682). According to him, all inorganic bodies are composed of earthy ingredients. There are 3 elementary earths, the fusible, the combustible, and the mercurial, severally principles of fluidity, combustibility, and volatility. These 3 earths are present in all metals, combined in different proportions. When combined with water they form the salts, and also a universal acid which is the basis of all acids. He regarded the calcination (oxidation) of metals and combustion in general as a process of decomposition depending on the expulsion of the combustible earth by means of fire. A simple body incapable of decomposition could not burn, for every body capable of burning must contain within itself a cause of its combustibility. This doctrine was soon adopted by Stahl, and under the name of the phlogiston theory characterized an epoch in the history of the science. Chemistry now first stands out on an equality with the other natural sciences. Its aim is no longer either the making of gold or the curing of disease. A desire to acquire a knowledge of the composition of bodies, to explain the phenomena which accompany their formation and decomposition, and to ascertain what relation exists between their properties and their composition, became now the motive of chemists. Modern chemistry, properly so called, now commenced. The first special problem which attracted attention was the explanation of the phenomena of combustion and oxidation. The analogy between these processes had long been observed and often considered. The ancients regarded combustion as dependent upon the separation of fire, apparently believing the latter to be something material. This view was admitted for a long period. The alchemists expressed a similar idea by their figurative sulphur, which was supposed to be expelled when a body burned. For the term sulphur, Becher substituted combustible earth, and defined more clearly the idea that it was separated during combustion. The notion that combustion destroys was undoubted; something was separated, causing the appearance of flame, while the incombustible residue was one of the components of the compound which had been destroyed. In like manner, when a metal was oxidized, the calx (oxide) was considered to be an educt from the metal. The famous phlogiston theory of Stahl (1660–1734) was a more accurate expression of these views. According to him, all combustible bodies must contain one and the same ingredient, to which they owe their common property, combustibility. This combustible matter he calls phlogiston; its existence, although entirely hypothetical, was regarded by Stahl as being so certain that it was hardly worth while to isolate it, and but few attempts to do so were made by his immediate followers. Later it was thought to be identical with hydrogen. Expressed in the language of the present day, phlogiston may be regarded as the opposite of oxygen. What is now deemed a combination with oxygen was considered by Stahl to be the result of a separation of phlogiston. During combustion phlogiston is expelled, while the other constituents of the compound remain. Charcoal, which leaves little or no residue when burned, was thought to be nearly pure phlogiston. In general, the combustibility of bodies was supposed to depend on the proportion of phlogiston which they contain. On examining the residues left by different substances after their phlogiston had been expelled, it was thought that a knowledge of their original constitution could be obtained. Experience was thus supposed to teach that phosphorus is a compound of phosphoric acid and phlogiston; that the metals are composed of calxes and phlogiston. If bodies from which the phlogiston has been expelled are heated with others rich in phlogiston, the latter give back phlogiston to the former and the original compound is produced. Thus, when a metal calx is heated with charcoal, the original metal is formed. Beside combustibility, Stahl referred color, solubility in acids, and other chemical properties of bodies, to the amount of phlogiston contained in them. For example, he showed that metals which had been deprived of their phlogiston could no longer unite with sulphur. These ideas were greatly extended by his followers. Stahl's observations of new facts and upon affinity were numerous and valuable. Although unable to free himself entirely from the vague speculations of the alchemists, he adopted in general the idea of elements suggested by Boyle, regarding as such all peculiar constituents of matter which by uniting with each other and with phlogiston form compound bodies. At this period investigations to ascertain what substances should be regarded as elementary, commenced. Thus the metal calxes (oxides) were considered to be elements, as were sulphuric and phosphoric acids, &c. Boerhaave (1668–1738) and Homberg (1652–1715) were especially diffusers of chemical knowledge. The *Elementa Chemiæ* of the former, published in 1732, exerted an influence which has probably never been surpassed. His experiments made in order to disprove certain statements of the alchemists deserve mention. It had been stated that mercury could be converted into an infusible metal when subjected to the continued action of heat. Boerhaave maintained a quantity of mercury at a moderate heat during 15 years without effecting such transformation. Another portion of mercury, being strongly heated in a closed vessel for 6 months, remained unaltered. It had also been stated by the alchemists that mercury could be converted by repeated distillation into a more volatile body. Boerhaave distilled pure mercury 500 times without perceiving any alteration in its boiling point. From these experiments he inferred that the given statements were erroneous. Geoffroy (1672–1731) published systematic tables of affinity, which exerted a long continued influence on the science. Margraff of Berlin (1709–1782) was distinguished as an analyst and technical chemist; he first called attention to the existence of sugar in the beet root and other plants indigenous to Europe. Macquer of Paris (1718–1784) pointed out the existence of arsenic acid, and made other new observations. His idea of 4 material elements, earth, air, fire, and water, illustrates the tendency of the period gradually to do away with the vague expressions of the alchemists. Equally characteristic is the fact that although Macquer had himself often used the quantitative method of analysis in investigating mineral waters and metallurgical matters, and considered it very necessary in such connection, he utterly neglected it when studying theoretical questions, and viewed with indifference the antiphlogistic theory, founded on such unimportant data, as he thought, as mere differences of weight. He regarded phlogiston as identical with light, and capable of passing through transparent media, thus explaining the reduction of peroxide of mercury by heat, which had been observed in glass vessels. The English chemists of this period were, meanwhile, observing facts which afterward constituted the most effective weapons of the opponents of the phlogiston theory. The discoveries of Black, Cavendish, and Priestley led naturally to its overthrow. The investigation of the alkalies by Black of Edinburgh (1728–1799) was of great importance. It had previously been supposed that when limestone was burned it united with fire and thus obtained caustic properties. From caustic lime this fire could be transferred to the mild (carbonated) alkalies, rendering them caustic, while the lime having given up its fire became again mild. Black disproved this view, by showing that the mild alkalies are compound bodies and become caustic, not by combining with fire, but from losing one of their constituents—a gas, which he called fixed air. He proved that limestone loses weight when burned to caustic lime, from which he inferred that the latter is contained in the former. He observed that the mild alkalies effervesce with acids, a gas similar to that given off by burning limestone being evolved. This gas (carbonic acid) he regarded as the 2d constituent of the limestone or other mild alkali, drawing the conclusion that the true caustic alkalies must be simple bodies which become mild only by uniting with fixed air. This view, after some opposition, was soon universally received by chemists. Black also distinguished more clearly than had been done before the difference between lime and magnesia. The discovery of latent heat is also due to him. The celebrated physicist Cavendish (1731–1810) added greatly to chemical knowledge by his accurate experiments upon gases. He investigated hydrogen, and was led to consider it identical with phlogiston. According to him, when dilute sulphuric acid is added to metallic iron or zinc, inflammable air or phlogiston separates unchanged from its combination with the calx, while the latter unites with the acid. If concentrated sulphuric acid be used, the phlogiston is no longer set free as inflammable air, but combines with a portion of the acid, forming another gas which is not inflammable (sulphurous acid—already called phlogisticated sulphuric acid by Stahl). Cavendish's view of the identity of hydrogen and phlogiston was soon admitted by the supporters of the phlogiston theory, especially after it was found that calxes could be transformed to metals when heated in an atmosphere of hydrogen. The original idea of phlogiston was thus somewhat modified. With Stahl a dephlogisticated substance meant one which had been oxidized: thus, sulphuric acid was dephlogisticated sulphur; while at the end of the phlogiston period it meant as well a body which had been deprived of hydrogen: thus Cavendish and Priestley call oxygen dephlogisticated water. Cavendish also investigated carbonic acid and the quantitative composition of atmospheric air. The latter he proved to contain oxygen and nitrogen in the same proportions at all seasons of the year and in different localities. He investigated the changes caused in air by combustion, showing that carbonic acid is formed only when the combustible is of animal or vegetable origin. Synthetically, he ascertained the composition of nitric acid by passing a series of electric sparks through air; also that of water. This last was specially important, having been used with great effect by the opponents of the phlogiston theory. Although few men contributed more to the overthrow of this theory than Cavendish himself, yet he to the last remained true to its tenets, having explained all his discoveries in accordance with them. His reputation has suffered greatly from this, for the chemists who subsequently correctly explained his observations have shared with him the merit of them. One of the last and firmest defenders of phlogiston was Priestley (1733–1804). Having invented suitable apparatus, similar to the pneumatic trough of the present day, he was enabled to collect and observe the properties of all the more important gases, the number of his discoveries in this field being truly remarkable. Most important among them was the preparation of oxygen from the red oxide of mercury by means of heat, although Priestley himself failed to appreciate the true value of his discovery. He, however, observed that this gas is given off by growing plants, whence he concluded that the latter thus replace the oxygen which has been removed from the air by combustion, &c., and that the 2 processes are in equilibrium with each other, the constant composition of air being thus maintained. Of equal importance for the development of the present system, though exerted in a different direction, were the labors of the Swedish chemists Bergman and Scheele. The method of analysis by the wet way introduced by Boyle had been but little followed till Bergman (1735–1784), carrying out the idea, established a complete series of reagents, and taught their use. He thus laid the foundation of the present system of inorganic analysis. He saw the advantage to be gained by causing each ingredient of a compound to unite with some other body with which it formed a combination of known constitution, capable of easy separation, rather than seek to isolate and determine it as such. Bergman analyzed a great number of substances, and investigated the composition of many salts. But although possessing such correct views, he was an indifferent analyst, not equal even to some of his contemporaries. His reputation was so great, however, that many years elapsed before any correction of his results was allowed, though many of them have been since proved erroneous. He made numerous important discoveries; correctly explained the difference between cast iron, wrought iron, and steel, as well as the composition of many salts previously misunderstood. His most important work was upon chemical attraction (affinity). Some idea of its magnitude may be given by stating the fact that he drew up tables of the affinity of 50 different substances for each other, arranging them in 2 series according to their behavior when treated respectively in the dry or wet way. An enumeration of the original observations and discoveries of Scheele (1742–1786) would fill a volume. His investigations in organic chemistry alone are sufficient to prove him one of the best analysts that ever lived. He separated all the more common organic acids from plants, and knew how to distinguish them when mixed with each other, having devised processes for their separation. Several acids of the animal economy did not escape him. He detected the presence of glycerine in the fats, separating it by means of oxide of lead, and prepared prussic acid from prussian blue. He also discovered molybdic and tungstic acids. Most fruitful was his research on the minerals of manganese, which, when the means at his disposal are considered, must be regarded as standing without parallel in the annals of chemistry. He discovered, first, the presence of a new metal (manganese); second, on adding muriatic acid to the black oxide of manganese, on which he was experimenting, a peculiar gas (chlorine) was evolved, the properties of which he accurately described. It is worthy of remark that he named it dephlogisticated muriatic acid, and at that time phlogiston was synonymous with hydrogen, showing that he regarded it in the same light as chemists do now. Thirdly, the ore of manganese on which he operated happened to contain a quantity of baryta, which he separated, and, having studied its properties, recognized as a new and peculiar substance. In solutions of its salts he found a test for sulphuric acid, which has since been universally used. Equally able was his investigation of fluor spar; he found it to be a compound of lime with a peculiar acid, which destroyed his vessels so rapidly that he was unable to collect it. He investigated atmospheric air in its relations to combustion, finding that it contains 2 different gases, one of which, "empyreal air" (oxygen), is capable of supporting combustion and respiration, while the other, "vitiated air" (nitrogen), cannot maintain these processes. He proved that the metals, when burned to calxes, absorb empyreal air, while the calxes give it off when reduced to metals. He prepared oxygen at about the same time as Priestley, entirely independently, as admitted by Priestley himself, having obtained it from peroxide of manganese and from saltpetre, as well as from the oxides of silver and mercury. The fact that the phlogiston theory had become inadequate to explain many points already known in chemistry, is more fully exhibited by Scheele than by any other chemist. He ostensibly believed in this theory, yet observation had taught him that oxygen is absorbed by metals during calcination and by combustibles when burning. To explain this, he conceived that oxygen is a compound of water with a certain light saline matter, in which compound but little phlogiston is contained. During combustion the phlogiston of the combustible unites with the saline matter of the oxygen, producing light and heat, while the residual product is a compound of the matter which had originally been combined with phlogiston in the combustible, with the water of the oxygen. This theory, it will be seen, differs most essentially from that of Stahl, who saw in combustion nothing but a separation of phlogiston, while Scheele regarded it as a mutual decomposition of the combustible and the substance supporting combustion, new compounds being produced.—These views clearly show the transition state of chemistry at that period. In general, the ideas which the several chemists attached to phlogiston toward the end of the 17th century were far from exhibiting the accordance which had previously existed. The main feature of the phlogiston theory consisted in regarding combustion as depending upon decomposition, while chemists have since learned that it arises from the formation of compounds. It however explained the analogies and mutual relations of numberless phenomena which had previously been known as mere isolated facts. It was the most rational theory of combustion, and many analogous processes now referred to oxidation and reduction, which had been proposed. In a comparatively short time it led to a multitude of discoveries. By regarding bodies as composed of undecomposable elements, it established the view which has ever since been admitted. Indeed, the definition of chemistry given by Stahl—the art of decomposing compound bodies and of reproducing them—is entirely in accordance with the spirit of the present day. Far from lamenting the phlogiston theory as an error, it should be regarded as a necessary basis for the views of the present epoch. In order to obtain a correct knowledge of substances, it was essential that their properties and relations to one another should be first investigated qualitatively. In the accomplishment of this work lies the merit of the phlogiston period. The quantitative method of investigation which followed, and which is characteristic of the present epoch, was but a natural succession. In no instance, however, in the history of chemistry has the transition from one system to another been so abrupt as from phlogiston to anti-phlogiston. Rarely has the introduction of an entirely new doctrine been so completely dependent upon one individual as was that of the present system upon Lavoisier (1743–1794). He first caused the importance of the quantitative method of research to be recognized, having by its aid perceived that the increase of weight acquired by a given weight of metal, when oxidized, must disprove the whole theory of phlogiston. The mere fact of this increase of weight had long been known; even Stahl was familiar with it. He regarded it, however, as entirely unessential and dependent on accidental circumstances. His followers were of the same opinion. One or two chemists had indeed called attention to the fact that this increase of weight was caused by an absorption of gas, but they had not themselves perceived the true importance of their observation, and their explanations had remained unnoticed. When at length the more careful investigation of Lavoisier had clearly proved the fact that the oxidation of metals is accompanied by increase of weight, the most absurd propositions were resorted to by the supporters of phlogiston. Among them it is only necessary to instance the hypothesis that phlogiston possessed absolute levity, being a substance endowed with a peculiar repulsive force, tending to remove it from the earth instead of gravitating toward it like other substances; whence a body losing phlogiston must become heavier. Lavoisier not only exposed the error of supposing that the heavier metallic oxide could be an ingredient of a metal possessing less weight, but also framed a new theory in explanation of the facts, viz.: that in calcination, as in combustion generally, one of the ingredients of the atmosphere unites with the combustible in such proportion that the products of combustion weigh exactly as much as the sum of the weight of the substance consumed plus the weight of the matter absorbed from the air. Still more important was his proof that wherever an increase of weight occurs combination must have taken place; that the weight of the product of such combination is equal to the sum of the weights of its ingredients, while diminution of weight is invariably owing to separation of ponderable matter. As an investigator Lavoisier stands preëminent. His precision of observation, ingenuity in devising apparatus, and his patience, are only equalled by the clearness of his conclusions and his masterly description of facts. His original experiment, showing that the increase of weight which a metal acquires when calcined is caused by its combination with a gas, deserves to be mentioned. A known quantity of metallic tin having been placed in a retort, the latter was sealed up and the whole weighed. Heat was then applied until the tin, having melted, was converted to a greater or less extent into a calx. On again observing the weight of the apparatus, it was found to have remained unchanged. But, on opening the retort, air rushed in, and on again weighing, an increase of weight was found to have occurred. This excess of weight showed how much air had entered the retort to replace what had been absorbed, and it was found that the weight of the tin had been increased by the same quantity. After the discovery of oxygen by Priestley, Lavoisier refined this experiment by using mercury in place of tin. Continuing his observations on oxygen, he found that carbonic acid is a compound of it and carbon, and explained the combustion of organic substances. He also studied the composition of sulphuric and other acids, seeking to multiply proof of his view that oxygen is the universal acidifying principle. Cavendish's discovery that hydrogen when burned forms water, afforded Lavoisier a clue for the explanation of the solution of metals in acids, which had previously been the weak point of his theory. He recognized at once that decomposition of water must take place, its hydrogen being set free, while the oxygen unites with the metal. He also prepared water synthetically, and analyzed it by passing its vapor over red-hot iron, with which the oxygen united while hydrogen was set free, thus fixing its composition beyond the possibility of doubt. Lavoisier distinguished among the chemical elements those which ought to be regarded as simple, their further decomposition being improbable, as light, heat, oxygen, hydrogen, and nitrogen. Others he considered not so much simple as undecomposed, their ingredients not yet being known. In this class he placed the alkalies, earths, and metals. The radicals of the acids he supposed to be simple; of these, sulphur, carbon, and phosphorus were known, while the radicals of boracic, muriatic, and hydrofluoric acids were merely hypothetical. He also sought to analyze organic substances by converting them into carbonic acid and water, thus originating the method now used, the means of executing which have alone been changed. The views of Lavoisier were greatly advanced through the coöperation of his contemporaries and countrymen, Guyton de Morveau (1737–1816), Fourcroy (1755–1809), and Berthollet (1748–1822). With Guyton de Morveau the idea of a rational nomenclature originated, and by his efforts the system now used was produced. The naming of chemical substances had previously been governed by no rules whatsoever, the name given to a new compound depending entirely on the taste and humor of its discoverer. With few exceptions no name offered any clue to the chemical properties of the substance. Guyton de Morveau first attempted, in 1782, to express an idea of the composition of a substance by its name. This met with violent opposition from all sides. Lavoisier, however, had keenly felt the want of a systematic nomenclature; he therefore accepted the proposition to combine his new theory with the new nomenclature. Associating himself with Guyton de Morveau, Berthollet, and Fourcroy, a system was produced, so nearly perfect that it has as yet experienced no essential change in spite of the immense development which the science has since undergone, and the discovery of many substances, the existence of which could not have been foreseen at the time of its formation. Berthollet was the first chemist of importance who adopted the views of Lavoisier. He afforded them most important aid by many admirable experiments and acute investigations. Although he manifested his own independence by refusing to admit that oxygen is the only acidifying principle, 2 acids, hydrosulphuric and hydrocyanic, which contain none, being already known, he was nevertheless led into error by Lavoisier's assumption that muriatic acid was composed of an unknown radical united with oxygen; conceiving that chlorine was composed of the same radical combined with more oxygen, while the acid which he discovered in chlorate of potash was supposed to contain this radical combined with a still greater quantity of oxygen. This error was not corrected until long afterward. Of the works of Berthollet, that upon affinity was of most importance for theoretical chemistry. While he admitted that all substances have really different degrees of affinity for each other, he sought to prove that what was commonly called affinity depended in great measure upon the relative quantity of the bodies acting on each other (force of mass); moreover, that the phenomena of decomposition attending such action depend essentially upon the physical properties of the compounds which are formed. Since affinity can act only through direct contact of the most minute particles of matter, a body may be removed from the field of chemical action either by its insolubility (preponderating cohesion), or by its escape in the gaseous form (elasticity). According to him, there is no reason why two bodies cannot unite in all possible proportions to form chemical compounds, if their cohesion and elasticity, as well as those of the resulting compounds, are equal. The very thorough manner in which Berthollet explained all existing facts by means of this theory, combined with the strictness of his conclusions, caused it to receive at once universal attention. A few of his views have been indeed disproved, but as a whole it has since exerted a highly important influence on chemistry. The intimate dependence of the phenomena of decomposition upon the physical character of the resulting compounds, and the great influence which mass exerts in most reactions, have been universally recognized. Berthollet made several important researches. He determined the composition of ammonia, discovered fulminating mercury, and contributed much to the existing knowledge of prussic acid, chlorine, and hydrosulphuric acid. The technical applications of chemistry which he brought about were numerous and exceedingly important; preëminent among them is the use of chlorine in bleaching.—The political condition of France toward the close of the 18th century exerted a most decided influence upon the progress and direction of chemistry, especially in its application to the arts, and its diffusion as a branch of popular knowledge. Previous to this time, technical chemistry was nothing but a collection of empirical facts, uncared for by scientific men, and all improvements in the arts depending upon chemical processes were the result of accident. But when France —a country accustomed to purchase from other nations her most important munitions of war—was cut off from outside communication, and compelled to defend herself against all Europe, scientific men, and especially chemists, were called upon to point out the means of producing the materials of war on which the very existence of the nation depended. They were asked to bring forth in a day arts which in other countries had resulted from the experience of years. There was no time now for a repetition of the groping empiricism by means of which these arts had been created. Science has rarely answered practical questions so quickly and clearly. Not only were the requisite munitions soon prepared, but many arts were developed to an extent previously unknown. A knowledge of the sciences thus came to be considered of great importance for the welfare of the nation. As soon as law and order had been in a measure restored, new institutions for instruction were formed, to replace those which had been destroyed, in which the study of mathematics and of the physical sciences was made preëminent. This purely material direction has been thoroughly carried out in several of the most renowned schools of France. The influence which it has exerted in diffusing chemical knowledge is incalculable. Since the latter has become a matter of popular education, the methods of teaching it have been made subjects of special study and have been vastly improved. The immense influence which chemistry now every where exerts upon arts and manufactures, and which is one of the characteristics, not only of the science itself, but of the civilization of the 19th century, may be traced directly ment can unite with one or more atoms of another element, the weight of the atom of the compound formed being the sum of the weights of its component atoms. He determined the relative weights of these atoms for the different elements, as expressed by the relative weights in which they unite to form compounds. Although the term atom used by Dalton expresses nothing more in a chemical sense than Richter's word equivalent, there was a tangibility in the former which caused the view to be more readily accepted. Moreover, Dalton's discovery of the law of multiple proportions, and that the atomic weight of compounds is the sum of the atomic weights of their ingredients, made the subject so complete that it could no longer be neglected. It was at once admitted into the science, and gave rise to the views concerning the quantitative composition of bodies which now exist. Beside the atomic theory, chemistry owes much to Dalton for his investigations of the expansion of gases, evaporation, and the relations of mixed gases, elasticity of steam, &c. Wollaston (1767–1828) did much to diffuse and extend Dalton's theory. His "scale of chemical equivalents" especially aided in this result. As an exact analyst also, he was deservedly celebrated. Most important in connection with Dalton's doctrine was the discovery by Gay-Lussac (1778–1850) of the law of combining volumes, in accordance with which gases unite with each other. In conjunction with Humboldt he first observed that one volume of oxygen unites with 2 volumes of hydrogen to form water. Extending his researches, he found that other gases unite in equally simple proportions, and that the volume of the resulting compound, if gaseous, bears a simple relation to the sum of the volumes of its ingredients. This proved conclusively that chemical compounds are formed only in a few fixed and definite proportions, according as it did with Proust's researches upon the composition of solid bodies. It was soon perceived that, the specific gravity of a gas being known, its atomic weight might be readily calculated, whence the determination of the density of gases became at once important. Of the many valuable investigations conducted by Gay-Lussac, those upon the expansion of gases by heat, density of vapors, for the determination of which he devised an apparatus, expansion of liquids, evaporation, sulphur acids, chlorine compounds, and iodine may be mentioned. His researches in organic chemistry were also very important. He first pursued the method of research which has since exerted so great an influence upon the development of chemistry. The investigation of the cyanogen compounds and isolation of cyanogen, a compound of nitrogen and carbon, yet closely resembling in its properties the element chlorine, gave rise to the idea of organic radicals, and formed the starting point to which the present method of regarding organic bodies directly refers. He first devised an apparatus for the ultimate analysis of organic substances, which produced useful results, infinitely superior to any previously obtained, and furnished a basis for improvement. He also introduced the system of determining the specific gravity of the vapors of substances to control analyses. Many of his applications of chemistry to the arts were of great importance; among them are the methods of assaying silver by the wet way, of alkalimetry, of chlorimetry, of assaying gunpowder, &c., still in use.—Simultaneously with the investigations upon the atomic weights and atomic volumes, which occupied chemists after the discoveries of Dalton and Gay-Lussac, another subject of great importance in its bearings upon the doctrine of affinity, and which produced most striking results when applied to the study of certain individual substances, was brought forward. This was the investigation of the connection between galvanism and the phenomena of affinity. When Berzelius and Hisinger began to study this subject in 1803, it had already been noticed that water could be decomposed by the galvanic current. They verified this experiment, and moreover showed that salts could be decomposed by the same means; while an electrical opposition between acids and bases was indicated by the fact that under all circumstances of decomposition acids were set free at the positive pole, bases at the negative pole, of the voltaic pile. The subject rested somewhat obscure, however, until cleared up by Sir Humphry Davy (1778–1829), most of whose labors were devoted to electro-chemistry. He first showed by a most admirable research that pure water when decomposed by galvanism produces only hydrogen and oxygen; that the acids (nitric and muriatic) and bases (ammonia and soda) obtained by previous experimenters had been produced either from air contained in the water or from the action of the galvanic current upon the vessels used in the operation. Studying this last action more carefully, he eventually succeeded in separating metals from the fixed alkalies, potash and soda, and proved these last to be metallic oxides. Small as were the quantities of metal thus obtained, he described their properties with surprising accuracy. He afterward proved that the alkaline earths are similarly constituted, and inferred from analogy that the earths are of the same nature; the correctness of which opinion has since been fully proved. Having studied the chlorine compounds, he was led to regard chlorine as an element, and disproved Berthollet's view of its composition, which had hitherto been universally received. This gave rise to the first modification of any importance which Lavoisier's system suffered. Oxygen could no longer be regarded as the sole acidifying principle. The idea of hydrogen acids was introduced, and substances which contain no oxygen admitted to be salts. Of the many other researches conducted by Davy, that upon flame and combustion, which led to the discovery of the safety lamp, was especially valuable. His electrical theory has been since modified, but, chemistry, Mitscherlich of Berlin (born 1794) has exerted a deep influence on the present condition of the science by his discovery of the law of isomorphism, in accordance with which certain groups of substances exist, any one member of which can be replaced by any other member or set of members in equivalent proportion in its compounds, without changing the crystalline form of the latter to any material extent; and of dimorphism, the power possessed by some substances of crystallizing in two distinct systems not reducible to the same primary form. Following as did these discoveries upon those of Faraday, and that of the French physicists, Dulong and Petit, of the relation between the specific heats and equivalent weights of substances, it tended greatly to call the attention of chemists to the physical relations of bodies. A physico-chemical school has thus been founded, to which several of the leading chemists of the present day belong. The discoveries of Mitscherlich, the details of which he worked out by a series of most laborious researches, were soon brought to bear with advantage upon the classification of the elements, while that of minerals underwent an entire reform.—The theory of compound radicals proposed by Berzelius was again made specially prominent by the publication (in 1832) of a memoir, the joint production of Liebig (born 1803) and Woehler (born 1800), upon the benzoyl series. Although Berzelius refused to admit the generalization made by these chemists, and disbelieved in the existence of radicals which like benzoyl contain oxygen, an interest was neverthelesss excited, which greatly contributed to the advancement of organic chemistry. The ethyl theory quickly followed, and was adopted by most German and English chemists. These results mark an era in the history of modern chemistry. A throng of pupils immediately gathered about Liebig. No other chemist has ever had control over an amount of talent equal to that of the students who for years crowded his laboratory at Giessen. Through them he has exerted an incalculable influence upon the present position of the science, while by his popular writings he has done much to diffuse chemical knowledge among the masses. Of the special labors of Liebig may be mentioned his efforts to determine what substances should be regarded as radicals, and to classify all known organic bodies in accordance with them; also his important improvements in the methods of analyzing organic substances. Beside the investigation of the oil of bitter almonds, which led to the discovery of the existence of benzoyl, his most important researches have been made in conjunction with Woehler; for example, those upon cyanogen compounds and the derivatives of uric acid, by which an immense number of new compounds were discovered. Woehler has also independently brought to light many new facts, not only in organic but also in inorganic chemistry; for example, his investigation of the compounds of tungsten, the preparation of aluminum and of glucinum, and lately, in conjunction with H. Deville, of silicon and boron. His method of preparing urea (1828) from inorganic substances was the first and for years the only example of the power of chemists to form organic compounds from their elements. All organic substances previously obtained had been either derived directly from plants or animals, or had been products of the decomposition of substances thus obtained; it had indeed been doubted if any others could ever be prepared.—The labors of the recent French chemists have aided, perhaps, more than any others in elevating the science to its present position. Although seemingly standing for years in direct opposition to those of the German school, the systems of both have at length been harmoniously combined. Dumas of Paris first discovered, by his research upon the action of chlorine on acetic acid, that the 3 equivalents of hydrogen contained in the latter can be replaced by as many equivalents of chlorine, while the acetic acid retains most of its characteristic properties. Upon this and similar observations he founded his theory of substitutions, according to which hydrogen and some other ingredients of compounds may be replaced, equivalent for equivalent, by some other element or group of elements, while the properties of the original substance are usually not essentially changed. Few theories have been more bitterly opposed than this, but the facts are now universally admitted. The investigation of the substitutions which can be produced in organic compounds has been for several years a favorite study with chemists. Of late the means of bringing them about, and of reproducing the primary substance by replacing the elements originally removed, have been greatly increased and have led to many fine discoveries. Numberless researches upon organic substances have been conducted by Dumas with very important results. His determinations of the specific gravity of many vapors were of great value, the ingenious apparatus which he devised for this purpose having since been almost universally used. Determinations of the specific gravity of gases made in conjunction with Boussingault were also valuable. Among his most important investigations are those upon the amidogen compounds, ethers, volatile oils, and especially upon wood spirit, made in conjunction with Peligot, by which its resemblance to alcohol was shown—an analogy carried yet further by Balard's discovery of amyl alcohol, which suggested the idea that the term alcohol must be regarded not merely in a specific but in a generic sense. Similar analogies were soon observed among other organic compounds, and it gradually became evident that very many organic substances could be classified together in homologous series—the composition of each member of which differs from that of the others, either by a certain number of equivalents of carbon and hydrogen, or by some simple multiple of this number, while the chemical proper-in a manner precisely analogous. Moreover, by substituting for glycerine any of the other various species of sugar, similar combinations have been obtained with the fatty and other acids. The indefinite extension which has thus been given to the chemical idea of the fats (glycerides) is a good example of the spirit of generalization now greatly in vogue.—The comparatively immense development which the study of organic compounds has taken of late years has at length brought chemical science to such a position, that a new epoch seems not remote. The laws by which the chemical relations of inorganic compounds have hitherto been so well explained, fail in many cases when applied to organic substances. The domain of organic chemistry has become so vast that it will soon assert its right to control the whole science. Several chemists have called attention to the apparent necessity of such reformation. It is acknowledged on all sides that the artificial division of chemistry into organic and inorganic, which has been admitted for some years, is entirely arbitrary, and in many respects unfortunate. That the science shall once more be consolidated is earnestly desired. The doctrine of substitution has already cleared up many matters in inorganic chemistry which had hitherto been inexplicable; while the question of doubling the equivalent weights of several of the elements in order to bring them into accordance with their combining volumes and certain other of their properties is still open. The extraordinary analogy between homologous groups of organic compounds and certain small groups of the elements, as chlorine, bromine, and iodine, has been remarked by several chemists. It has recently been generalized by Prof. J. P. Cooke, of Cambridge, Mass., who has shown that not only isolated triads, but all the elements, may be brought into such homologous series, expressed like those of organic compounds by the general formula $a+nb$. The properties of the members of these series vary in degree in a regular manner according to their position, as in the series of organic bodies. Dumas has within a few months criticized, and in a measure modified, Cooke's classification, while acknowledging its merit. The bearing of this subject upon the relation of compound radicals to the so-called elements cannot fail to strike every observer; the difference between them consisting simply in the ability of chemists to separate the former into several ingredients, while the latter are elementary only because they cannot as yet be thus decomposed.—Without occupying themselves with the investigation of a problem, the transmutation of metals, to the solution of which their science in its present condition offers no clue, chemists have ceased to ridicule the aspirations of the alchemists, although they will always condemn the venal spirit which actuated them. The possibility of effecting such transmutation has of late, however, been more strongly suggested by the discovery of several remarkable examples of allotropism, a term employed to signify that the same body may exist under two or more different conditions, possessing distinct physical and chemical properties. (See ISOMERISM.) The fact that bodies so entirely unlike in their properties as the diamond, graphite, and charcoal are, chemically speaking, identical, standing as it did for a long time an almost isolated example, excited comparatively little attention. Nor was much notice taken of the different states of sulphur, and of other bodies the allotropism of which was less clearly apparent. But a deep interest has been awakened since the discovery of ozone (allotropic oxygen) by Schoenbein of Basel, and especially of red phosphorus by Schroetter of Vienna, bodies as unlike ordinary oxygen and phosphorus as can be conceived in every respect but their combining equivalents and reconvertibility into each other. The recent observation that the elements boron and silicon are, like carbon, susceptible of three modifications, has but strengthened this feeling. These discoveries have recalled attention to the fact that several of the metallic elements have identical equivalent weights, as cobalt and nickel, platinum and iridium, &c.; the question naturally arising whether they may not be allotropic modifications of one and the same substance, especially as such modifications of several substances preserve their peculiarities even when combined in similar quantities with other bodies; for example, the compounds of the red and green varieties of the sesquioxide of chromium. Even the idea attached to the term element has been somewhat modified. At one time it was regarded as expressing not only a certain relative weight of a simple substance, but this substance was supposed to possess constant properties, which were as indestructible as the element itself. Instead of this view, which is at present untenable, the old idea of essence has been in a measure restored.—It would be of course impossible to enumerate here all the valuable labors which have recently been performed by chemists. Those of H. Rose, in developing inorganic analysis; of Regnault, Bunsen, Kopp, and Magnus, in investigating the physical laws connected with chemistry, and of the first two of these chemists in perfecting the processes of gas analysis; of Rammelsberg, Pasteur, and Schabus upon the crystallography of chemical products; of Pelouze, Redtenbacher, Malaguti, Williamson, Heintz, Rochleder, Staedeler, Strecker, Cahours, Anderson, Kolbe, and a host of others, in addition to those who have previously been alluded to, in the field of organic chemistry, deserve special mention. The discovery of the anhydrous organic acids by Gerhardt may here be noticed, as well as H. Deville's process for preparing aluminum and sodium on the large scale, which promises to exert an influence in advancing chemical knowledge equal to that which resulted from the manufacture of potassium and sodium by Gay-Lussac and Thénard. A very general tendency to extend the use of the so-called volumetric method of anal-lated into German by Nicolai.—Philipp Bogislav von, a grandson of the preceding, born at Stettin, May 9, 1605, died at his seat, Hallstad, in Sweden, in 1678. Employed in the military service of Holland, and afterward of Sweden, he attracted the attention of Chancellor Oxenstiern, and at his recommendation Queen Christina appointed him royal councillor and historiographer. He is the reputed author of a remarkable work, which appeared under the name of *Hippolytus a Lapide*, and was entitled *De Ratione Status in Imperio nostro Romano-Germanico*, &c. (2d ed., Freistadt, 1647). French translations of it appeared in 1712, and again at the Hague in 1762.

CHEMNITZER, Ivan Ivanovitch, a Russian fabulist, born in St. Petersburg in 1744, died in Smyrna, March 20, 1784. He was of German descent, began to study medicine, afterward served in the army, and after spending some time in mining employments, accepted the office of consul-general in Smyrna, where he fell into a state of melancholy from which he never recovered. His fables were published anonymously from 1778 to 1781, and under his name in 1799. Some of them are taken from Gellert and La Fontaine. The best editions are those published in Moscow by Ponomareff in 1836, and by Smirdin in St. Petersburg in 1847.

CHEMOSH, or Chamosh, a national god of the Moabites and Ammonites, supposed by Jerome, but without foundation, to be the same as Baal Peor. King Solomon introduced the worship of Chemosh among the Israelites. He was worshipped under the symbol of a black star; his worshippers went bare-headed, and used no garments sewn with the needle.

CHEMUNG, a co. of N. Y., bordering on Penn.; area, 518 sq. m.; pop. in 1855, 27,288. Chemung river, Cayuta, Catharine's, and Wynkoop's creeks are the principal streams. Seneca lake touches its N. boundary; the N. Y. and Erie railroad traverses the county, and the canal from Elmira to Seneca lake partly intersects it. The surface is uneven, and in some places rises into considerable mountains. The country near the river banks is level and alluvial, and these flats are in some places extensive and very fertile. The productions in 1855 were 82,378 bushels of wheat, 478,469 of oats, 239,285 of Indian corn, 131,291 of potatoes, 24,941 tons of hay, and 924,645 lbs. of butter. There were 17 grist and 99 saw mills, 2 planing mills, 2 woollen factories, 2 manufactories of edge tools, 2 breweries, 7 furnaces, 11 tanneries, 33 churches, 104 school-houses, and 2 daily and 4 weekly newspapers published. This co. was formed from a part of Tioga co. in 1836, and named from Chemung river. Capital, Elmira.

CHENANGO, a co. in the S. E. central part of N. Y.; area, 624 sq. m.; pop. in 1855, 39,915. Unadilla river touches its E. boundary; the Chenango and the E. branch of the Susquehanna intersect it, and it is drained and supplied with water power by several smaller streams. The surface is elevated, and in some places broken and hilly. The soil is good, especially near the rivers. In 1855 it produced 24,844 bushels of wheat, 564,242 of oats, 854,480 of Indian corn, 270,542 of potatoes, 117,870 tons of hay, 3,990,564 lbs. of butter, and 1,212,544 of cheese. There were 28 grist mills, 110 saw mills, 1 planing mill, 1 paper mill, 2 manufactories of agricultural implements, 1 machine shop, 15 furnaces, 8 carding establishments, 1 cotton printing establishment, 4 woollen factories, 17 tanneries, 111 churches, 275 school-houses, and 6 newspaper offices. The Chenango canal, traversing the county, connects Utica with Binghamton. The co. was formed from portions of Herkimer and Tioga cos. in 1798, and named from Chenango river. Capital, Norwich.

CHENANGO RIVER rises in Oneida co., N. Y., flows S. S. W. through Madison and Chenango cos., and empties into the Susquehanna in Broome co., near the Pennsylvania border. Its whole length is about 90 m.

CHENAUB, Chenab, or Chinab (anc. *Acesines*), the largest of the five rivers of the Punjaub, and tributary of the Indus; total length about 765 m. The Chenaub rises, according to Moorcroft, about lat. 32° 48′ N., long. 77° 27′ E., in Lahool, S. of Ladakh or Middle Thibet, and flows N. W. to the borders of Cashmere, and thence mainly S. W. A little below Aknoor it emerges upon the plain of the Punjaub, from which point it is navigable for rafts. Still holding a S. W. course, it unites with the Jhylum, and about 50 m. below with the Ravee, and then with the Ghara, from which point it loses its name, and the united stream is called the Punjnud, which flows into the Indus just as it leaves the S. boundary of the Punjaub. The meeting of the 2 rivers is tranquil; the water of the Chenaub is red, that of the Ghara pale, and these distinctive colors may be seen for some miles downward in the united stream, the red on the western, and the pale on the eastern side.

CHENAVARD, Paul, a French painter, born in Lyons, Dec. 9, 1808. Previous to the revolution of 1848 he was already known by his pictures of the "Trial of Louis XVI." and "Mirabeau answering the Marquis of Dreux-Brézé." He was now chosen to execute 50 cartoons for the French Pantheon, and selected for his subject the history of civilization from Genesis to the French revolution. Twenty of the cartoons were completed, when, after the *coup d'état* of 1851, the Pantheon was restored to the service of religion. Three of them attracted much attention at the exhibition of 1853.

CHENDAREE, Chanderee, Chindaree, Chandhairee, or Chunderee, a town and district of Malwa, in the territory of Gwalior, Hindostan, situated near the frontier of Bundelcund, 105 m. S. of Gwalior, and 280 m. S. of Delhi. It is a large town, surrounded by hills and jungles, with which a few fertile tracts are interspersed. Its manufacturing importance, once considerable, has been destroyed by British importations, and its architectural beauty is in ruins; but even in its present decayed state, inaugural piece for the *théâtre de la république*, and was succeeded by the *Mort de Calas*, both remarkable for purity and energy of style, but above all for democratic aspirations. He wrote the *Chant du départ*, which, next to the *Marseillaise*, is the most celebrated lyric of the revolution. He was chosen to the national convention, but although siding with the *montagne* party, he was among the first to oppose revolutionary excesses; and as early as 1792, in his *Caius Gracchus*, he advocated the supremacy of the law. *Des lois, et non du sang*, was his hero's and his own motto. This impaired his popularity, so much so that he was charged with hostility toward the republic, and the further performance of his tragedy was prohibited. He went on, however, to write in the same spirit the plays of *Fénélon* and *Timoléon*, both of which were proscribed. The tragic end of his brother affected him deeply, notwithstanding their political differences. Discontinuing, almost, his contributions to the stage and his speeches on political subjects, he now confined his activity in the convention and the council of 500 mainly to the subject of public education. In 1801 he published *Discours sur les progrès des connaissances en Europe, et de l'enseignement public en France*. From 1803 to 1806 he filled the office of inspector of public instruction, being at the same time a member of the tribunate. In 1804 he tried to conciliate Napoleon by flattering allusions in his tragedy of *Cyrus;* but these were not powerful enough to counterbalance the well-known republican sympathies of the poet. In 1806 and 1807 he delivered, at the Athenæum of Paris, a series of historical lectures upon French literature. In 1808, Napoleon having requested the French institute to report upon the recent progress of French literature, the report was written by Chénier under the title of *Tableau historique de l'état et des progrès de la littérature Française depuis* 1789, a work remarkable for extensive knowledge, soundness of criticism, and great impartiality. His last performance was another report upon the decennial prizes. During all this time poetry had not been neglected; he had written several satirical or philosophical epistles, the style of which is at once fervid and classic; the two most remarkable among the number being one addressed to Voltaire, and another *Sur la calomnie*, in which he repelled with eloquent indignation the calumnies hurled against him in consequence of his brother's death. He has left also several tragedies; one of them, *Tibère*, is pronounced his masterpiece. His complete works were published in 8 vols. 8vo. in 1823-'26, with notices by M. Daunou and by Arnault, and with a critical review of his plays by M. Lemercier.

CHENOT, Claude Bernard Adrien, a French engineer, born at Bar-sur-Aube in 1808, died in 1855. He entered the mining school in Paris in 1820, after which he was attached to the secretaryship of the department of bridges and roads, and superintended the working of the mines in Auvergne. In 1838 he invented an apparatus for the manufacture of metallic sponges, and afterward obtained sponges from the earthy minerals, as aluminum and calcium, which he made to enter into other combinations, especially with steel, to which he by this means gave remarkable properties. Matter in the sponge state, he thought, is the greatest power to which the chemist can have recourse, and he sought to found upon it a new system of metallurgy. He made many experiments for the purification of combustibles and metals, and several times poisoned himself with gases, and especially with carbonic oxide, the dangers of which he was one of the first to point out.

CHEOPS, Chemmis, or Chembes, an ancient Egyptian king, who is supposed to have built the pyramid called by his name. After a bloody reign of 50 years, he was succeeded by his brother Cephren, who built the second of the pyramids.

CHEPO, a river and town of New Granada, South America. The river enters the Pacific 18 m. E. of Panama; and a little above, at the narrowest part of the isthmus, is the town—a small place, and an entrepot for traffic with the Mandingo Indians.

CHEPSTOW, a market town on the Wye, in the co. of Monmouth, Eng., on the South Wales railway from Gloucester to Milford Haven, 27 m. from the former city, and 141 m. from London; pop. 4,295. It contains an ancient church, formerly belonging to the Benedictine priory, recently restored to its former splendor; and a castle founded in the 11th century by William Fitzosborne, earl of Hereford, rebuilt in the 13th, and still a magnificent pile. On account of the narrowness of the channel, the tide rises, it is said, sometimes to the enormous height of 70 feet, frequently more than 50. The town possesses a large trade in timber, coals, millstones, and iron.

CHER, a river of France, rises in the department of Creuse, flows E., N., and W., and after a course of 220 m., during which it describes a semicircle, joins the Loire near Tours. The canal of Berry runs parallel to it in the upper part. Principal affluents, the Tardès, Arnon, Evre, and Saudre. It is navigable 47 m. from the Loire.

CHER, a central department of France, with a level surface, nearly ¼ covered with wood, divided into 8 arrondissements (Bourges, St. Amand, and Sancerre), 29 cantons, and 291 communes; area 2,747 sq. m.; pop. in 1856, 314,844. Capital, Bourges. Total annual contributions of the department to the national revenue, $1,400,000. The annual value of the agricultural produce is about $900,000, beside a large production of hemp, timber, &c., and 5,500,000 gallons of wine of inferior quality, excepting those of Sancerre. The white wines of Sancerre are sold in Paris under the name of Chablis. There are mines of coal and iron, 82 industrial establishments, and manufactories of woollen and other goods, but the chief trade is in rural and mineral produce.

CHERBOURG, an arrondissement and town of France, in the department of Manche; pop. of the former in 1856, 95,158, and of the latter 38,309. The arrondissement is divided into 5 cantons, and possesses 50,000 acres grain land, 17,000 various crops, 14,000 meadow, 8,000 fallow, 6,000 forest. Of industrial establishments there are 183. The annual value of the raw material employed in manufacturing is $1,000,000, and of goods manufactured $1,300,000. The number of hands employed is 1,684. The average daily wages are for men 40 cents, and for women 20 cents.—The town of Cherbourg, one of the principal seaports and naval stations of France, is situated on the N. shore of the peninsula of Cotentin, at the mouth of the Divette, in the centre of a bay, the extremities of which are formed by Cape Levi on the E. and Cape La Hague on the W., and connected by railroad with Paris. Under the Romans it was known as *Coriallum* or *Cortallum*, a name which was changed to *Carusbur* during the middle ages. As early as the 10th century, it was very much frequented as a port. When Edward III. of England landed at La Hogue in 1346, Cherbourg was among the first cities of Normandy conquered by the English. It changed hands several times, until it was finally secured to the French by Dunois in 1450. During the 7 years' war, the English effected a descent on the coast, took the town, and destroyed all the naval and military works, docks, and arsenals, blowing them up and burning the lock gates of the harbor with all the vessels in it. The project of creating at Cherbourg a harbor of refuge for war vessels was entertained by Louis XIV. as early as 1665, and Vauban was commissioned to draft the plans of a series of improvements and defences; but nothing was done until 1739, when quays and 2 moles were constructed. From that time the works have been continued, with occasional interruptions, down to the present day. Over $80,000,000 are supposed to have been expended on them. Violent storms have more than once destroyed the labor of years. The roadstead, in a bay at the N. extremity of a narrow promontory, has been formed by the construction of an immense breakwater running E. and W., partly across its mouth, and composed of 2 unequal arms, joined at an angle of 170°, with the opening toward the land. This stupendous work was commenced in 1784, and up to the end of 1853 had cost nearly $14,000,000. (See BREAKWATER.) The annual cost of keeping it in repair is estimated at 120,000 francs. The roadstead which it serves to defend has anchorage for 400 large vessels. The commercial harbor is at the head of an inner bay at the S. end of the roads, near the mouth of the Divette, and consists of an outer basin communicating with the sea by a channel 656 yards long, and 55 yards wide, bordered with long quays, and with an inner floating dock, closed by flood gates. The military port is distinct from this, and lies on the W. shore of the same recess, facing N. E. It comprises 3 large docks, viz.: an outer one, 984 feet long and 754 feet wide; another on the N., communicating with the former, and closed by lock gates; and a third on the W., larger than either of the others, through which it must be entered. All these have been excavated from the solid rock. The first, the construction of which is due to Napoleon I., was inaugurated by the empress Maria Louisa in 1813; the 2d was commenced the same year; and the 3d, called the dock of Napoleon III., built of granite masonry, 1,260 feet long and 600 feet wide, was begun in 1836, and opened in the presence of the French emperor and empress, Aug. 7, 1858. Its cost was 16,000,000 francs. Brilliant fêtes and rejoicings preceded and followed the ceremony, and the occasion was selected for a visit to the works by the queen of England, for the inauguration of an equestrian statue of Napoleon I., and for the opening of the railway from Cherbourg to Paris. There are 6 smaller docks or building slips connected with the principal basins, and the dock of Napoleon III. has 3 of its sides grooved with slips for repairing vessels. These slips, 7 in all, are furnished with flood gates, and may be used as dry docks. Surrounding the basins are work-shops, smithies, timber yards, a ropery, furnaces, barracks, a powder magazine, and all the establishments necessary for a naval arsenal, the whole shut in by a strong line of fortifications extending from shore to shore. The town and harbor are defended by a series of formidable works commanding every avenue of approach. On the centre of the breakwater is a strong fort, and on each of its extremities is a battery crossing fire with similar works on the opposite points of land or intervening islands. The shores of the bay and several rocky islands bristle with the guns of forts Chavaignac, des Flamands, du Galet, du Longlet, and du Homet, so placed as to sweep every part of the roadstead and harbor; while on the land side the town is surrounded by a double line of 14 star forts and redoubts; making a total of 24 regular works of defence, mounting over 3,000 guns of heavy calibre, which have been erected in different parts of this apparently impregnable position. Cherbourg is ill-built, but has fine promenades, a handsome theatre, and on the *place d'armes* is a monument commemorating the landing of the duke of Berry in 1814. It is the seat of many foreign consuls, of a maritime prefecture, of civil and marine courts; has a communal college, a public library, and a library connected with the navy. It is estimated that about $\frac{2}{3}$ of the population are employed in the navy yard. The entrances of foreign vessels in 1855 were 4,541, tonnage 33,630; clearances 4,561, tonnage 42,400. Entrances of coasting vessels, 48,937 tons; clearances, 19,956 tons.

CHÉRI, ROSE CIZOS, a French actress, born at Étampes in 1825. The daughter of an actor, she appeared on the stage before she was 15, and was greatly admired in the many cities she visited in company with her father. In 1842 she went to Paris, and appeared twice at the Gymnase theatre, but made so little impression that she was induced to accept an engagement at a salary of less than $200 a year. A lucky circumstance soon occurred, which fixed the attention of the public upon her genius. Unexpectedly called upon to take the place of the leading actress in the play entitled *Une jeunesse orageuse*, she produced a deep impression on the audience, and from that night (July 5, 1842) became a great favorite in Paris. Her salary was increased fourfold, and the most popular dramatists were anxious to have her perform in their plays. For the last 15 years she has been the principal attraction at the Gymnase. Her characteristics are a singular *naïveté* of expression blended with refined and graceful manners. She has achieved her greatest triumphs in *Clarisse Harlowe* and *La niaise de St. Flour*, expressly written for her. Latterly, however, she has tried characters of a different kind in *Le fils de famille*, *Diane de Lys*, and *Le demi-monde*. On May 12, 1845, she married the manager of the Gymnase theatre, M. Lemoine-Montigny.

CHEROKEE, the name of counties in several of the United States. I. In the W. of N. C., area about 950 sq. m.; pop. in 1850, 6,838, of whom 337 were slaves. It is intersected by Hiawassee and Valley rivers, and borders on Tenn. and Ga. The surface is mountainous; Unaka or Smoky mountain in the N. W., and the Blue Ridge, near the S. E. border, being the principal ranges. The soil, particularly near the streams, is quite fertile. In 1850 it yielded 204,827 bushels of corn, 35,761 of oats, and 24,296 of sweet potatoes. The tract from which this county was formed in 1839 was formerly in the possession of the Cherokee Indians. Capital, Murphy. II. A N. W. co. of Ga.; area 620 sq. m.; pop. in 1852, 13,825, of whom 1,285 were slaves. The soil is fertile, and the surface diversified by hills and fine rolling lands. In the N. E. part are quarries of excellent statuary marble; gold mines have been opened and found profitable, and iron, copper, and titanium are also obtained. The Etowah, the principal river, is navigated by steamboats, and supplies good water power. In 1850 the county produced 444,984 bushels of corn, 60,008 of oats, 78,465 of sweet potatoes, and 272 bales of cotton. There were 34 churches, and 650 pupils attending public schools. Capital, Canton. Value of real estate in 1856, $1,430,388. III. A N. E. co. of Ala., bordering on Ga.; area 710 sq. m.; pop. in 1850, 13,884, of whom 1,691 were slaves. The Coosa river, which bisects it, and the Chattooga, one of its affluents, are the principal streams. There are several mountain ranges, and extensive forests of pine, oak, &c. In 1850 the productions were 2,717 bales of cotton, 546,986 bushels of corn, 79,645 of sweet potatoes, and 68,678 of oats. Number of pupils in the public schools, 1,292. The county was organized about the year 1837. Capital, Centre. IV. An E. co. of Texas; area 1,215 sq. m.; pop. in 1856, 13,144, of whom 2,329 were slaves. It consists of prairies, alternating with woodland, and is bounded by the Neches river on the W. and by the Angelina on the E. Productions in 1850, 226,660 bushels of corn, 5,528 of oats, 54,291 of potatoes, 1,083 bales of cotton, 1,295 lbs. of tobacco, 4,250 of rice, 122,097 of butter, and 2,492 of wool. Value of real estate in 1857, $888,880. Capital, Rusk. V. A N. W. co. of Iowa, recently formed; area 625 sq. m.; intersected by the Little Sioux river. It is not included in the census of 1856.

CHEROKEES, a tribe of the Appalachian group of American Indians, occupants for centuries of the southern slopes and valleys of the Alleghany mountains, the highlands of Carolina, Georgia, and Alabama, the most picturesque and salubrious region E. of the Mississippi. Their original territory comprised over 35,000,000 acres. They formed a nation by themselves, and had about 50 small villages in the valley of the Tennessee river. They are the most civilized of the Indian tribes. Their language abounds in vowels, and is destitute of labials; and from its limited number of syllables an ingenious half-breed member of the tribe named Guess was able, in 1826, to invent a syllabic alphabet, by which the Cherokee is written and read with facility. De Soto fell in with them in his expedition, and they informed him that there was gold 30 m. to the northward. They appeared favorably disposed to the English colonists, and Wousatasata, one of their chiefs, in 1721, received royal investiture from the English governor, Nicholson. By a treaty in 1730, they acknowledged themselves subjects of Great Britain. In 1755 they made an extensive cession of lands to Gov. Glen, and permitted the erection of Fort St. George near their villages of Conasatchee and Keowee. In 1757 they volunteered to protect the English frontier S. of the Potomac, but though they displayed great valor they received no reward. In 1759 there were several skirmishes between them and the back settlers of Virginia and the Carolinas, the result of which was the invasion and devastation of their country by Gen. Montgomery, in 1760. Yet the English army was forced to retreat, Fort Loudoun surrendered to the savages, and in the next year an army of 2,600 men, under Col. Grant, was able to subdue them only after a severe conflict. In 1773 the colony of Georgia obtained a large cession of lands from them, the proceeds of which were to be applied to the payment of debts due to Indian traders. There was a 2d war between the Cherokees and frontier colonists in 1776, in which the crops of the former were destroyed and they sued for peace. There were hostilities for the 3d time in 1782, and an expedition undertaken against the Cherokees by Gen. Pickens resulted in a treaty, by which Georgia obtained all the Cherokee lands S. of the Savannah and E. of the Chattahoochee. By a treaty in 1785, they acknowledged the sovereignty of the United States, and, with the Chickasaws and Choctaws, were confirmed in possession of the larger part of the present states of Tennessee, Alabama, and Mississippi, with portions of Georgia and North Carolina. They constantly complained of encroachments upon their lands, but were temporarily quieted, in 1791, by a treaty, which secured them an annuity of $1,000 as a compensation for the lands occupied by white intruders. In 1793 another temporary war was kindled with them by the unjustifiable aggression of a militia officer, who crossed the Tennessee without orders and killed a number of the most friendly and influential members of the tribe. By a survey made in 1798 it appeared that several considerable tracts in the state of Tennessee, already occupied by white settlers, fell within the Cherokee territory. An attempt to remove these settlers produced the greatest discontent, and it was therefore determined by the government to buy up the claim of the Indians. By a treaty signed at Tellico, in consideration of $5,000 in goods and an annual payment of $1,000, the Cherokees ceded the lands in question, granting also a free passage through their territory to travellers to Kentucky. By a convention in 1802, Georgia ceded to the United States her claim to more than 100,000 sq. m. of territory W. of what now constitutes her western boundary, and thus a large part of the Cherokee country was brought under the national jurisdiction. From the period of the revolution the government had sought to introduce the arts and habits of civilized life among the Indian tribes, and the Cherokees had now made so much progress in husbandry and the rearing of cattle that they were more ready to cede a part of their remaining lands, which they no longer needed for hunting grounds. In 1805, for $14,000 in cash and a perpetual annuity of $3,000, they yielded up a large tract N. of Duck river in Tennessee. In 1807 the government erected in their territory, for their use, a grist mill and a machine for cleaning cotton. In the war of 1812 Cherokees fought in the American ranks, and were honorably mentioned in the despatches of Gen. Jackson. The irritating proximity of the Indians and white men had early suggested the project of inducing all the Indian tribes to remove W. of the Mississippi. In 1817 and 1819, when the Cherokees numbered about 15,000, and had made considerable progress in the arts of civilization, many of them, after the manner of their white neighbors, having become slaveholders, 2 treaties were concluded, which were the first steps in the arrangement that resulted, 20 years later, in the reluctant and forced emigration of all the Cherokees to their present country in the Indian territory. They at this time made a new concession of lands, retaining of all their once vast possessions only a mountainous tract of about 8,000 sq. m., chiefly within the nominal limits of Georgia. Here about 9,000 of them continued to reside, while 6,000 were persuaded to remove to a district assigned them in the centre of the present state of Arkansas. The incompatibility of the Cherokees and the planters of Georgia prompted the government, in 1828 and 1835, to make new attempts to induce the former to go west; and, by a treaty obtained from them at the latter date, they gave up the whole of their original territory in exchange for a plot westward of the state of Missouri. The majority of the nation and chiefs protested against the treaty as unauthorized, yet it was confirmed by congress, and in 1838 Gen. Scott with 2,000 men marched into the Cherokee country, and the tribe obeyed his summons to assemble at certain points, prepared to migrate from the land of their fathers. They were removed, under federal officers, to a place in the Indian territory further westward than that assigned them by the treaty of 1819; their industrial and educational means were transplanted with them; and they were furnished with provisions for a year after their arrival in their new homes. Their district comprises 9,776,000 acres in the N. and E. of the Indian territory. There they have much increased in numbers, intelligence, and industry. They have written laws; a well organized government, similar to that of the several states; a legislature or general council, consisting of a committee of 2 members from each of their 8 districts, and of a council of 3 members from each; an executive, chosen for 4 years; and a judiciary, consisting of a supreme court and circuit and district courts. They live mostly in villages, have comfortable dwellings, and are skilful and diligent in agriculture and some of the mechanic arts. They have recently given much attention to stock-raising, and they sell annually several thousand head of cattle and a large number of ponies. The pay rolls of 1853 indicated an aggregate population of 19,367; and they had 1,100 scholars in their schools. They have a printing press and newspaper, a complete translation of the Gospels, and almanacs, hymns, and many pamphlets. Missionaries employed by the American board of foreign missions and other institutions have long resided among the Cherokees, and have had much influence in civilizing and educating them. The sum expended for this tribe during the revolutionary war and the confederacy was $580,103; from 1789 to 1819 it was $218,311; and it increased in proportion till their removal to the west. They have permanent investments in state stocks, guaranteed by the United States, of $759,899, the interest of which ($38,692) they annually receive from the U. S. treasury, in appropriations, according to the treaty of Dec. 1835.

CHERRY. The common cultivated cherry tree (*prunus cerasus*, Linn.; *cerasus vulgaris*, Loud.) is of Asiatic origin, and is said by Pliny to have been introduced into Italy from Pontus during the Mithridatic war, about 70 B. C., and about 120 years afterward it was introduced into Britain. At present it is extensively cultivated in the temperate regions of

Europe and America. The Romans recognized 8 varieties of it, and more than 800 varieties are now reckoned in catalogues. The branches are spreading, horizontal, or slightly inclining upward in the larger trees, and drooping in the smaller ones; the flowers are in subsessile umbels, somewhat stalked; the leaves are ovate-lanceolate, smooth, folded together, and of lightest color in the largest varieties; and the fruit is round or heart-shaped, commonly red, but passes into all shades between that color and dark purple. The wood is of a reddish hue, hard and tough, and much used by the cabinetmaker; the gum which exudes from the bark is edible; and the fruit is eaten either fresh or dried, and is made into preserves. The cherry tree is best propagated by grafting on seedlings of the wild cherry.—The wild cherry tree (*cerasus Virginiana*, Loud., and *prunus serotina*, Ehrhart) is one of the largest productions of the American forest, sometimes attaining a height of 100 feet with a trunk 8 or 4 feet in diameter. It is found from Mexico to Hudson's bay, and abounds in the middle states, and in Kentucky and Ohio. Its wood is compact, fine-grained, and of a dull, light red tint, which deepens with age. It takes a brilliant polish, and is not likely to warp. It is employed by cabinet-makers for almost every species of furniture, and when selected near the ramification of the trunk it rivals mahogany in beauty. Where it abounds, it is used in ship-building and for the fellies of wheels. The fruit is purplish black, slightly bitter, and is used for flavoring brandy. This tree is cultivated in Europe for ornament.—The choke-cherry (*prunus Virginiana*, Linn.) has often been confounded by botanists with the preceding. It is a tall shrub, seldom a tree, with greenish bark, oblong, sharply serrate teeth, and red fruit, turning to dark crimson, and very astringent till perfectly ripe. It is common on river banks W. of the Alleghanies, and along the Atlantic parts of America, especially northward. Its bark is known to physicians as a tonic. Its fruit affords nourishment to birds, which are said to be sometimes affected by it with a sort of intoxication.—The *prunus avium* (Linn.), or *cerasus sylvestris* (Loud.), is the wild cherry tree of England and continental Europe, and in favorable situations acquires a height of 60 or 70 feet in about 50 years. Its fruit is known in England by the name of *gean*, and is highly prized in France for the food it supplies to the poor. It is also used to make jelly and cherry brandy. Its wood is manufactured into furniture and musical instruments, and wine casks made of it are said to improve the flavor of the wine kept in them.

CHERRY LAUREL (*prunus lauro-cerasus*, Linn.), called in England the common or broad-leaved laurel, is a native of the Levant, and was brought from Constantinople to Holland in 1576. It has racemose flowers, pale evergreen, oblong-lanceolate leaves, and is so hardy that neither frost nor drought seems to affect it. It is now one of the most popular evergreens in English pleasure grounds, and is almost as common in shrubberies as the rose. Its leaves are poisonous from the abundant hydrocyanic acid which they contain, and should be used with caution. By distillation the laurel water of commerce, the German *kirschwasser*, and other poisonous cordials, are obtained from them. The fresh leaves are often employed to give a flavor to culinary preparations.

CHERSON, or Kherson, a government of European Russia, in Little Russia, bounded N. by the government of Kiev, E. by that of Ekaterinoslav, S. E. by that of Taurida, S. by the Black sea, W. by Bessarabia, between lat. 46° 12′ and 49° 4′ N., and long. 29° 10′ and 85° 5′ E. The government is divided into 6 districts. Area, 28,186 sq. m.; pop. about 900,000, consisting of Russians, Cossacks, Poles, Bulgarians, Tartars, Greeks, Armenians, Jews, Gypsies, and many foreign settlers, mainly Germans, who occupy about 60,000 acres of land and form 50 or 60 colonies. The Greek Christians are under the archbishop of Cherson, Taurida, and Ekaterinoslav, whose cathedral is in the latter city, and who has 867 parishes in Cherson. With the exception of the N. W. and N. E. borders, where there is some wood, and some extensive forests in the neighborhood of Elisabetgrad, the country consists of an immense plain with but few trees. The soil, however, is covered with grasses and other plants, and produces in the interior rich pastures. The principal rivers are the Dnieper and the Dniester. Wild animals abound, especially wolves and wild cats. The most common tame animal is the sheep. Oxen and buffaloes are numerous and used for draught; the horses (of which many are wild) are spirited and noted for their swiftness. The fisheries are important, especially in the Dniester. The minerals are freestone, slate, chalk, talc, saltpetre, agates, and garnets. The northern part of the government possesses many distilleries and tallow manufactories; rope-walks and tile-works are scattered all over the country. The products are wheat, hemp, flax, tobacco, mustard, saffron, and wine to the extent of 550,000 gallons annually. The principal quality of wheat cultivated is called Albanian wheat. The produce of cattle has diminished; merino sheep, however, have been successfully introduced and produce a fair quality of wool. Many of the peasants are engaged in manufacturing linen. But the chief seat of manufacture as well as of trade is Odessa; and next in commercial importance is the capital of the government, also named Cherson. The latter is situated on the Dnieper, lat. 46′ 87′ 46′ N., and long. 82° 88′ 88″ E.; pop. 85,986. It is divided into 4 quarters, and is the seat of the provincial government and of several learned institutions. Cherson was founded in 1778 by Potemkin, whose tomb is in the cathedral, and was destined by Catharine to become the southern Petersburg of the empire. But the bad climate of the town has proved unfavorable to its growth, and the vicinity of Odessa has still more contributed to reduce its importance. The imperial dockyards have been of late years removed to Nikolaiev. The small amount of trade of the town is almost entirely in the hands of the Greeks. John Howard the philanthropist died in Cherson, and a monument was dedicated to his honor by the emperor Alexander I.

CHERSONESUS, or CHERSONESE (Gr. *Χερσονησος*), a peninsula. The word is not used generally of all peninsulas, and the ancients do not appear to have regarded all such pieces of land, partially surrounded by water, as we should now designate as peninsulas, in that light. Spain, for instance, and Italy, they never seem to have looked at in their general conformation. What they generally regarded as a chersonese appears to have been a long narrow strip of land, with its projecting length far exceeding its breadth. Of the larger peninsulas of antiquity, 4 were known as chersoneses, beside many smaller ones scarcely exceeding what we should now call promontories or headlands, the latter word exactly corresponding with what the Greeks called *ακρα*, and one or two cities named from their position on spots of the nature and form mentioned above. Of these 4 chersoneses, 3 have the peculiar elongated shape which seems necessary to constitute them what they are called, one only being nearly an irregular parallelogram in shape, connected by a narrow neck with the mainland; and all of the 4 having narrow straits connected with them, which in two instances are termed bospori. Of these 4, the first is the Thracian Chersonese, commonly known to the Greeks as the Chersonesus emphatically; being the long, narrow strip of land running out southwesterly from the mainland of European Turkey, between the Hellespont, now Dardanelles, and the gulf of Melas. Not many leagues distant, at the eastern extremity, is the Thracian Bosporus, now the canal of Constantinople. The 2d is the Tauric Chersonesus, the modern Crimea, which alone has not the elongated shape, but is somewhat fashioned into the semblance of a trapezium. It has, however, a narrow channel, the straits of Yenikale, which is also a bosporus, called the Cimmerian for distinction, across which, before the earliest historic ages, the Cimmerii, or Cimbri, are said to have been conducted by a heifer; as in later times the Huns are reported to have been introduced under the same guidance. The 3d is the Cimbric Chersonesus, or Jutland, which has exactly the above described shape, and the narrow strait probably called the Cimbric Bosporus, between its right flank and the island of Funen, known as the Little Belt. The last is the Aurea Chersonesus, or Golden Chersonese, the modern peninsula of Malacca.

CHERT, a variety of the quartz family, of horny texture, resembling flint and chalcedony. It is often found in limestone rocks, and is observed to pass by gradual changes into limestone.

CHERUB (Heb. plur. *cherubim*), an angel, holding in the celestial hierarchy the first rank after the seraphim. The etymology and primary meaning of the word are not certainly determined. It was cherubim that guarded the entrance to the terrestrial paradise after the sin of Adam.—In painting and sculpture, the name is given to the winged heads of children which represent angels.—In Sweden, the order of the cherubim is the old name of a military order now called the order of the seraphim.

CHERUBINI, MARIA LUIGI CARLO ZENOBI SALVADOR, a musical composer, born in Florence, Sept. 8, 1760, died in Paris, March 15, 1842. He studied under his father, who was a pianist, and in 1769 under Bartolommeo and Alessandro Felici, also under Pietro Bizzari and Giuseppe Castrucci. In 1773 he produced a mass, which, with other of his compositions, attracted the attention of the grand duke Leopold, who enabled him to become a pupil of Sarti of Bologna, under whom he studied from 1778 to 1782. As early as 1780 he produced his first opera, *Quinto Fabio*, at Alessandria, and in 1784 he had already produced 8 operas in the theatres of Italy. In 1785 he composed for the London Italian opera *La finta Principessa* and *Giulio Sabino*; in 1788 at Turin his *Ifigenia in Aulida*; and in the winter of the same year he brought out his *Demophoon*, and in 1791 his *Lodoïska*, at Paris. The latter opera established his fame, and was followed by *Élisa*, *Médée*, *L'hôtellerie Portugaise*, *Les deux journées*, *Anacréon*, and his ballet of "Achilles at Scyros." In 1806 he produced *Faniska* at Vienna; in 1809, *Pimmalione* at Paris; in 1813, *Les Abencerrages*; in 1814, *Bayard à Mézières*, in conjunction with Catel, Boïeldieu, and Nicolo; in 1821, *Blanche de Provence*, in concert with Paër, Boïeldieu, Berton, and Kreutzer; and in 1833, *Ali Baba*. He excelled most in sacred music. His celebrated mass in F for 8 voices, his grand "Requiem," his *Messi Sacrie*, are the noblest monuments of his genius. Haydn and Beethoven pronounced him the greatest sacred composer of the age. In 1822 he became director of the *conservatoire* of Paris, with which he had been connected from the date of its foundation in 1795, and which is greatly indebted to him for its prosperity. Among his pupils were Boïeldieu, Auber, Carafa, and Halévy. Adolphe Adam wrote of him after his death: "Contemporary of Haydn, Mozart, Beethoven, and Rossini, Cherubini seems to have been placed by nature among those great geniuses as a moderator, whose wisdom and firmness were destined to counteract their eccentricities."—The most important of Cherubini's literary works is *Méthode de contre-point et de fugue*, published in 1835, containing a summary of the lessons in strict composition which for several years he had given at the conservatory. He was enthusiastically devoted to his profession, and his independence as an artist frequently manifested itself. Napoleon for a long time could not forgive him, because on one occasion, when he rudely contradicted him on some point of music, the artist replied: "Citizen Bonaparte, in the art of war you are preëminent, but you should leave music to those who understand it."

CHERUSCI, a German tribe, celebrated for their great victory over the Romans under Varus. They are first mentioned by Cæsar. They dwelt on both sides of the Visurgis (now Weser), bordering S. on the Suevi, from whom they were separated by the Bacenis forest, probably the western part of the Thuringian mountains, N. E. on the Elbe and the Longobardi, N. W. on the Angrivarii, and S. W. on the Catti or Chatti. The elder Drusus first led a Roman army through their country, advancing as far as the Elbe; but their ensuing subjection to the empire was soon ended by the great German conspiracy under Arminius, or Hermann, and the destruction of the legions of Quintilius Varus in the Teutoburg forest, in the year 9 of the Christian era. The dissensions, however, which broke out between Arminius and Segestus, his father-in-law, allowed Germanicus to invade their country in the years 15 and 16. He defeated Arminius, but was soon compelled to return. In 17, the Longobardi having gone over from the league of the Marcomanni to that of the Cherusci, Arminius was victorious over Marbod (Maroboduus), the king of the Marcomanni. After the death of Arminius intestine struggles weakened the power of the Cherusci; an ensuing period of peace made them indolent and unwarlike, according to Tacitus, but they still appear as an important people in several later leagues of the Saxon tribes, in whose general name they became subsequently merged. They are last mentioned by Claudian, toward the close of the 4th century.

CHERVIN, Nicolas, a French physician, celebrated for his researches into the nature and treatment of yellow fever, born at St. Laurent d'Oingt, near Lyons, Oct. 6, 1783, died at Bourbonne-les-Bains, 1843. In pursuance of his inquiries into the types of fevers, and particularly of typhus, he spent some time in the military hospitals of Mentz, and formed the opinion that typhus is not contagious, but appears so from its rapid propagation. In 1819, Dr. Lassis having contended that yellow fever is no more contagious than typhus, Chervin determined personally to investigate the subject. With this view he set out for the West Indies, and visited successively St. Domingo, Guadeloupe, Martinique, New Orleans, and Cayenne. During his 5 years' search he only met with the disease in sporadic cases, never in its epidemic form; but by thoroughly investigating these, and secretly dissecting several bodies, he became convinced that yellow fever is non-contagious. On his return to France, he was made a member of the legion of honor, but passed the rest of his life in great poverty, writing innumerable papers to prove that yellow fever is not contagious, and that quarantine regulations neither prevent nor check it.

CHÉRY, Philippe, a French painter, born in Paris, Feb. 15, 1759, died Feb. 28, 1838. Espousing the cause of the revolution, he took a part in the siege of the Bastile, and was successively a member of the convention, member of the first committee of public safety, mayor of Charonne and Belleville, and chief of police in the department of the Seine. Banished by Bonaparte after the 18th Brumaire, he did not return to France until 1802. His historical paintings gained for him a high reputation.

CHESAPEAKE BAY, the largest bay in the United States. It enters Virginia between Cape Charles and Cape Henry, and extends into Maryland. Its length, following the curve, is about 200 m.; its breadth varies from 4 to 40 m. There is sufficient depth of water for the largest ships to ascend the main bay almost to the mouth of the Susquehanna. The Chesapeake is remarkable for the vast number of arms or estuaries, of various dimensions and of irregular shapes, which mark the line of its shores. Some of these serve as outlets to the waters of the different rivers of Virginia and Maryland, while others are fed by no permanent streams, but are mere indentations in the coast. Southwest of Cape Henry, the rivers and sounds are shallow, and there are few good harbors, but the Chesapeake forms the first of a series of deep and commodious bays which extend along the coast, at no great distance from one another, from Virginia to the N. E. extremity of the Atlantic coast of the United States.

CHESEBRO', Caroline, a living American authoress, born in Canandaigua, N. Y. Her first stories and sketches appeared in 1848, in "Graham's Magazine," Philadelphia, and "Holden's Dollar Magazine," New York. In 1851 a collection of her writings was published in a volume entitled "Dream Land by Daylight; a Panorama of Romance." This was followed by "Isa, a Pilgrimage," in the next year, and by several novels in the succeeding years, one of the most meritorious of which is "Victoria, or the World Overcome," which appeared in 1856. She has contributed occasionally to newspapers, and frequently to "Putnam's," "Harper's," the "Knickerbocker," and the "Atlantic" magazines. Her works are chiefly grave and emotional in tone.

CHESHIRE, a S. W. co. of N. H.; area 770 sq. m.; pop. in 1850, 30,143. It touches Vermont on the W., is traversed by the Connecticut river, and drained by the Ashuelot and some smaller streams. The Connecticut is navigable by boats throughout the county. At Bellows Falls are several locks. The surface is hilly and beautifully diversified by a number of lakes and ponds, and there are some mountains of considerable elevation, the principal of which are Grand Monadnock and Ashuelot. The soil is good, and the river bottoms especially are very fertile. The productions in 1850 were 177,301 bushels of corn, 364,501 of potatoes, 67,129 tons of hay, 758,181 lbs. of butter, and 437,681 lbs. of cheese. There were in operation during the reached in 17 days, and, hiring a small schooner at Beyroot, got on board a French steamer at Alexandria. On reaching Marseilles, he learned that Lieut. Lynch was already on the way back to continue the navigation of the rivers at the expense of the E. I. company. In 1850, Col. Chesney published his "Survey of the Euphrates and Tigris," London, 2 vols., from which it appears that he has collected materials for a line of levels from Iskanderoon on the Mediterranean to Bir on the Euphrates, and thence to the Persian gulf; explored N. Mesopotamia, with the rivers Karoon and Bahamishar, and the country intervening between the Jerahi and the Euphrates, as well as the great delta of Susiana; further, has twice ascended the Tigris to 400 m. above its junction, and has prepared a 2d line of levels between the 2 rivers, with a geological section of the Taurus for some hundred miles. The English Euphrates valley railway owes its origin to these explorations. In 1852, he published "Observations on Firearms;" and in 1854, "Narrative of the Russo-Turkish Campaigns of 1828–'29."

CHESS, the oldest and most scientific of sedentary amusements, originated in India about 5,000 years ago. Its history may be divided into 3 periods: 1. The age of the *chaturanga*, or primeval Indian game, extending from its origin down to about the 6th century A. D. In the chaturanga the moves of the men were almost the same as in the present game, but it was played by 4 persons, and the combatants determined what piece to move by the throw of a die. 2. The age of the *shatranj*, or mediæval game, embracing the period between the 6th and 16th centuries. In the shatranj the game was reduced to a contest between 2 persons, and the element of chance was discarded. Early in this stage of its history the game passed eastward into China and Japan, where in the lapse of time it has been considerably modified, and westward through Persia and Byzantium into Europe, where it became, during the middle ages, the favorite in-door pastime of the court and the cloister. 3. Modern chess includes the period from the commencement of the 16th century to the present day. It is distinguished by some changes in the fundamental laws of the game, such as an increase in the powers of the queen and bishop, and the introduction of castling.—Chess is now cultivated by all civilized nations, and its theory and practice have been investigated by innumerable writers of ability. The most prominent are, among Asiatics, Ali Shatranji, Suli, Damiri, Sokeiker, Rhazes, Ibn-Sherf-Mohammed, and Ghulam Kassim; and among Europeans, Jacobus de Cessolis, Conrad von Ammenhusen, Alfonso the Wise, Lucena, and Vicent, before the close of the 15th century; Damiano, Ruy Lopez, and Giannuzio, in the 16th century; Salvio, Carrera, Augustus duke of Brunswick, Greco, and Saul, in the 17th century; Bertin, Stamma, Philidor, Del Rio, Lolli, Ponziani, Cozio Stein, Zuylen van Nieveld, and Allgaier, in the 18th century; and Koch, Sarratt, Cochrane, Lewis, Bilguer, Von der Lasa, Bledow, Alexandre, Walker, Jänisch, Calvi, and Staunton, in the 19th. The poetry of chess has been illustrated by Vida, Middleton, Tuccius, Kochanowski, Sir William Jones, Cérutti, Méry, D'Arblay, Slous, Tomlinson, and others. Sarrasin, Freret, Hyde, Severino, Leibnitz, Jones, Wahl, Twiss, Madden, Bland, and, most thoroughly of all, Forbes, have explored its history. The most famous players of the last 400 years have been Paoli Boi, Leonardo da Cutri, Salvio, Del Rio, and Dubois, of Italy; Ruy Lopez and Xerone of Spain; Legal, Philidor, Deschapelles, and La Bourdonnais, of France; Cunningham, Stair, Janssen, Sarratt, McDonnell, and Staunton, of England; Allgaier, Bilguer, Hanstein, Mayet, Von der Lasa, Anderssen, Lange, and Harwitz, of Germany; Petroff and Kieseritzky, of Russia; Szen and Löwenthal, of Hungary; Stein, of Holland; Stamma, of Syria; and Morphy, of America. During the present century the popularity of the game has largely increased, owing to the establishment of chess periodicals, to the interest attaching to public contests between great players or between different clubs, and to the influence of assemblies or conventions of amateurs, such as the tournament held at London in 1851, and the congress which met at New York in 1857.—Chess is played by 2 persons on a board of 64 alternately white and black squares, each player having 16 men, 8 pieces and 8 pawns. The player, having placed the board so that he has a white corner square at his right hand, may place the white men as follows: the queen's rook in the left hand corner nearest him; the queen's knight in the square next to it; then successively, the queen's bishop, the queen, the king, the king's bishop, the king's knight, and the king's rook, until he reaches the right side of the board. The white pawns are then placed on the 8 squares immediately in front of the pieces; and the black pieces and pawns are to be arranged in the same manner on the opposite side of the board. The following rules describe the moves of the men, and the laws of the game:

1. The rook moves in straight lines parallel with the sides of the board. 2. The knight moves from the square upon which it stands, to any one of a different color, at a distance of three squares, counting the one from which it starts. 3. The bishop moves diagonally, forward and backward, in a line composed of squares of a like color. 4. The queen moves at pleasure, either like the rook or bishop. 5. The king moves one square in any direction. All the pieces capture in the same direction in which they move. 6. The pawn moves directly forward; its first move may be either one or two squares, but each succeeding move is limited to one square. The pawn captures diagonally, to the right or left, one square forward. All the men capture, by removing the captured man and placing the capturing one on the square thus rendered vacant. No man can pass over any occupied squares, except the knight, the move of which piece has no such restriction.—Castling is a double move of the king and rook at the same time. Castling on the king's side is performed by moving the king to king's knight's square (g 1 or g 8), and the king's rook to king's bishop's square (f 1 or f 8); on the queen's side, by moving the king to queen's bishop's square (c 1 or c 8), and the queen's rook to queen's square (d 1 or d 8). Castling is permitted to either player once during the game, under the following conditions: 1. Neither of the castling pieces can have been

the muscles pertaining to the ribs; the dorsal portion of the spinal column completes the walls of the chest behind, and the sternum completes them in front. The neck connects the chest with the head, and the midriff or diaphragm divides internally the cavity of the chest from that of the abdomen. The upper portion of the chest, between the spine, first ribs, and the sternum, forms an aperture through which the trachea passes from the throat into the lungs, and the great arteries and veins of the head, neck, and arms pass out of the chest from the heart and main vessels. The spaces between these vessels and the bones are occupied by the œsophagus, by certain nerves and muscles, and by what is termed cellular or connective tissue. The whole chest thus forms a cavity closed on all sides, but allowing the passage of certain tubes or vessels through the upper and the lower portion of its walls, such as the trachea, œsophagus, blood-vessels, nerves, &c. This cavity contains within it 3 subordinate cavities, the middle one containing the heart sheathed in the pericardium, and each of the 2 cavities at the sides containing one of the lungs, sheathed by the pleural serous membranes, and called the pleural cavities. Each lung is hung, as it were, in its appropriate cavity by its bronchus from the trachea, and by the trunks of its pulmonary artery and veins, which, enclosed together by connective tissue, form what is called the root of the lung. For the sake of easy motion, the wall of the cavity is lined, and the surface of the lung is covered by a very fine smooth membrane called the pleura, the contiguous surfaces of which are moistened with a sort of dew to prevent friction from alternate respiratory motions of the chest and lungs. The pleural cavities being completely closed on all sides, no air can enter them, but the lung in each cavity communicates with the external air by means of its bronchial tubes leading to the trachea and larynx, through which the air passes, not into the cavity of the chest, but into the interior of the lung. In their medium state, the lungs of a person of ordinary size and in good health contain about 12 pints of air. In easy breathing, about a pint is drawn into them at each inspiration; but this may vary from 1 to 7 pints, according to the efforts made for muscular exertion, or during singing, or before coughing. The limit which the rigidity of the walls of the chest sets to the elastic collapse of the lungs is never reached in ordinary respiration, but sometimes very nearly approached in the efforts of coughing and sneezing.

CHESTER. I. A S. E. co. of Penn., bounded S. and S. E. by Md. and Del., N. E. by the Schuylkill river, W. by Octorara creek, and drained by French, Elk, and the sources of Brandywine creeks; area 738 sq. m.; pop. in 1850, 66,438. It formed one of the 3 original counties of the province established by William Penn in 1682, and was named after the city of Chester in England. The surface is much diversified. A rich limestone valley about 2 m. wide, extending from the Schuylkill to the Susquehanna, divides the county into 2 nearly equal parts, of which the S. is rolling or gently undulating, with rich deposits of chromate of iron, valuable porcelain clay, and gneiss; while the N. is rugged and contains gneiss, sandstone, red shale, copper, and abundance of lead and iron. The N. W. boundary is formed by a low ridge called Welsh mountain. Beside the minerals above mentioned, there are silver, zinc, titanium, zircon, agate, chalcedony, amethyst, sapphire, and beryl. The valley yields excellent limestone and marble. Agriculture is carried to great perfection, and the productions in 1850 were 1,839,466 bushels of Indian corn, 547,498 of wheat, 1,145,712 of oats, 170,620 of potatoes, and 22,738 pounds of wool. There were 165 grist mills, 88 saw mills, 8 iron founderies, 20 woollen factories, 16 cotton factories, 27 tanneries, 5 newspaper offices, 150 churches, and 11,360 pupils attending public schools. The county is traversed by the Penn. Central and the West Chester railroads, and by the proposed route of the Philadelphia and Baltimore Central railroad. The Philadelphia and Reading railroad passes along its N. E. border. Valley Forge and Paoli, of revolutionary fame, are in this county, which also contains the birthplace of Gen. Anthony Wayne. Capital, West Chester. II. A northern district of S.C., bounded E. by the Catawba, and W. by Broad river; area 570 sq. m.; pop. in 1850, 18,038, of whom 9,887 were slaves. The surface is uneven, the soil is fertile, and the productions in 1850 were 573,070 bushels of Indian corn, 36,750 of sweet potatoes, 1,110 pounds of rice, and 17,810 bales of cotton. There were 23 grist mills, 12 saw mills, 19 churches, 1 newspaper office, and 418 pupils attending public schools. The county is traversed by the Charlotte and South Carolina railroad. It was settled in 1750 by emigrants from Virginia and Pennsylvania. Capital, Chesterville.

CHESTER, a flourishing post borough of Delaware co., Penn., pop. in 1850, 1,667, situated on the Delaware river and on the Philadelphia and Wilmington railroad, is the oldest town in the state. It was settled by the Swedes in 1643, and was originally called Upland. The provisional assembly was held here under the government of William Penn in 1682. It was the county seat of Chester county until Delaware county was organized in 1789, when it became its capital, and remained so until recently.

CHESTER, an episcopal city, port, parliamentary and municipal borough of England, capital of the county of Chester, and a county in itself, situated on the Dee, 17 m. S. S. E. of Liverpool, and 164 m. N. W. of London; pop. in 1851, 27,766. It was a Roman station called *Deva* or *Deva Castra;* was known to the Britons as *Caer Lleonvawr*, and by the Saxons was styled *Legancester* or *Legecester*. It stands on a high rock, nearly encompassed by the Dee, and surrounded by walls and towers, the substructure of which is probably Roman, while the upper portions date from the time of Edward I. These walls are in excellent preservation, and are thought to be the most perfect remains of ancient fortification in England. They are from 5 to 8 feet thick, and on their summit is a walk with parapets, from which may be obtained extensive and beautiful views. The space which they enclose is a parallelogram, planned like the Roman camps, with a gateway in the middle of each side, and 2 main streets intersecting at right angles in the centre of the town. These are remarkable for being sunk far below the lowest inhabited portions of the houses, and below the footways, which are within piazzas called rows. The latter consist of broad paved walks underneath the 2d floors of the houses, with balustrades in front, and shops on the inner side. There are stairways at intervals leading down to the road, where there are also some shops. The side streets run at right angles, and like the main avenues are mostly well paved and lighted with gas. A good supply of water is obtained from the Dee. In addition to many curious wooden dwelling houses of venerable age, Chester contains numerous objects interesting to the antiquary. A round tower connected with the walls bears an inscription stating that from its summit King Charles beheld the defeat of his army on Rowton Moor in 1645. In Bridge street are a Roman *hypocaustum* and sweating chamber in remarkably good preservation. The castle, originally built by Hugh Lupus, earl of Chester, and governor of the province under William the Conqueror, has been almost wholly reconstructed in modern times, and is now used as the shire hall, county gaol, armory, and barracks. Near the castle a handsome stone bridge crosses the Dee with a single arch of 200 feet span. The Chester and Holyhead railway, which has here one of the largest stations in the kingdom, also crosses the Dee on an iron girder bridge. The cathedral, originally the abbey of St. Werburgh, built for the Benedictines in 1093 by Hugh Lupus, assisted by St. Anselm, is a remarkable Gothic structure, full of interesting memorials. There are 11 other churches, 9 of which are parochial, the most important being St. John's collegiate church, once considered the cathedral. It is a very ancient building, partly in ruins, and was mentioned in the Domesday survey. The arches and piers of the nave are probably Norman; the choir has been rebuilt, and the transepts were entirely destroyed at the reformation. The Roman Catholics and dissenters have a number of places of worship. There is a grammar school, founded in the time of Henry VIII., and called the king's school. It is under the direction of the dean and chapter of the cathedral, is free to 24 foundation scholars, and has 5 exhibitions and an income from endowment of £62 per annum. Among the other institutions are a normal college, many charity schools, an infirmary, house of industry, alms houses, linen hall, exchange, union hall and commercial hall, mechanics' institute and museum, a government school of art, library, savings bank, theatre, and public baths. There are 2 public parks and a cemetery in the environs, and not far distant are Saighton Grange, a curious manor house once belonging to the abbey of St. Werburgh, and Eaton hall, the seat of the marquis of Westminster. Famous races have been held here from a remote date; fairs for the sale of cheese take place monthly, other fairs 3 times a year, and markets twice a week. Ship-building, formerly on the decline, has been revived by judicious improvements in the river Dee. The other branches of industry are rope and sail making, and the manufacture of paint, shot, lead pipes, whips, thread, gloves, and tobacco. The exports are cheese, lead, calamine, copper plates, cast iron, and coal; the imports, butter, provisions, hides, tallow, timber, iron, hemp, hops, wine, and oil. The registered shipping of the port, Dec. 31, 1856, amounted to 120 vessels, tonnage 7,653; entered from foreign ports during the year, 4 vessels, tonnage 590; cleared for foreign ports, 3 vessels, tonnage 395; coasting vessels entered, 1,490, tonnage 75,065; coasting vessels cleared, 1,769, tonnage 81,020. Chester is connected by the Ellesmere canal with Liverpool, and by railway with Liverpool, Holyhead, Shrewsbury, and Crewe. It gives the title of earl to the prince of Wales, and sends 2 members to the house of commons.—In 1858 was published in London, "The Mediæval Architecture of Chester," by John Henry Parker, with an introduction by the Rev. Francis Grosvenor.

CHESTER-LE-STREET (Saxon, *Conecceastre*), a village and parish of England, co. of Durham, on a Roman military road, and near an ancient Roman station, 6 m. N. of the town of Durham; pop. of village in 1851, 2,580. Its parish church, dedicated to St. Cuthbert, whose remains are said to have rested here for 113 years before their removal to Durham, and to St. Mary, is an imposing Gothic building, with a handsome tower, and a spire 156 feet high. It contains the stone effigies of the lords of Lumley, 14 in number, from Lyulph, the Saxon founder of the family, to the time of Elizabeth. The see of a bishop was removed hither from Lindisfarne in 882, and remained until 995, when the prelate and clergy were expelled by the Danes. The bishopric was then fixed at Durham. The village is lighted with gas, and contains one or two chapels, an endowed school, a mechanics' institute, a library, a savings bank, and manufactories of rope, nails, and tiles. There are coal mines, brass and iron works, corn mills, paper mills, fire-brick yards, a steam engine manufactory, and a productive salt spring in the vicinity. Near here also are Lumley castle, a seat of the earl of Scarborough; Lambton hall, belonging to the earl of Durham, and Ravensworth castle, one of Lord Ravensworth's residences. The first mentioned is an interesting building, supposed to have been founded in the 14th century.

CHESTERFIELD. I. A S. E. co. of Va.,

bounded by the Appomattox on the S., by James river on the N. E.; area 800 sq. m.; pop. in 1850, 17,489, of whom 8,616 were slaves. The surface is uneven and most of the soil poor, though the river bottoms are fertile. Coal is found in large quantities. The county yielded in 1850, 888,-938 bushels of corn, 95,875 of wheat, 116,690 of oats, and 218,562 pounds of tobacco. There were 84 churches, and 567 pupils attending public schools. Chesterfield was formed from Henrico county in 1748. Capital, Chesterfield Court House. Value of real estate in 1856, $4,809,106. II. A N. E. district of South Carolina, bordering on North Carolina; area 868 sq. m.; pop. in 1850, 10,790, of whom 8,894 were slaves. It is much diversified by hills and valleys, and fertile near the streams. Great Pedee river bounds it on the N. E., and it is drained by a number of small creeks. In 1850 it produced 8,194 bales of cotton, 257,651 bushels of corn, 12,594 of wheat, 41,258 of oats, and 56,434 of sweet potatoes. There were 26 churches in the district, and 855 pupils attending public schools. Capital, Chesterfield Court House.

CHESTERFIELD, a town, parish, and municipal borough of England, co. of Derby, situated on the Midland railway, at the junction of the rivers Hipper and Rother, 20 m. N. of Derby; pop. in 1851, 7,101. The town is tolerably well paved, lighted with gas, and supplied with water. The houses are of brick or stone, irregularly but substantially built, and roofed with tiles or slates. The parish church, a Gothic building of the 18th century, with a twisted spire covered with lead, 2 other churches, a new and an old town hall, various chapels, a handsome school house for a free grammar school founded under Elizabeth, alms houses, a savings bank, and a mechanics' institute, are the chief buildings of note. The manufactures are lace, silk, gingham, and earthenware. Considerable trade is carried on in malt, and the coal mines, quarries, and smelting furnaces of the vicinity afford employment for the lower classes. The Chesterfield canal connects the town with the river Trent. This place gives the title of earl to a branch of the Stanhope family.

CHESTERFIELD, Philip Dormer Stanhope, 4th earl of, born in London, Sept. 22, 1694, died March 24, 1778. He was educated at Cambridge, and having early entered public life, was on two occasions sent as ambassador to Holland. He afterward became lord lieutenant of Ireland, and finally secretary of state. He retired from official life in 1748, but still continued to give attention to public affairs until incurable deafness caused him to pass into private life. He was remarkable for sparkling wit, elegant manners, solid talents, and attention to business. His administration of the difficult and responsible duties of viceroy of Ireland was very able. In England he filled the highest office; and in 1751, after his retirement, he introduced, together with the earl of Macclesfield, the bill for the reformation of the calendar, the errors in which had long been notorious. Lord Chesterfield, beside his fame as a diplomatist, has a reputation as the author of a remarkable series of letters. They are private effusions written to his son, and published after his death by that son's widow. They run over a large range of education, literature, politics, and individuals; and although a want of moral tone and an excessive attention to externals may be imputed to them, Dr. Johnson has said of them that "they ought to be studied by every gentleman." A collection of his letters to other individuals, his speeches and miscellaneous writings, has been published, full of brilliant wit, knowledge of the world, and tersely expressed views of the public men of Europe. The best editions of Lord Chesterfield's letters and miscellanies are by Lord Mahon, London, 1845 and 1858.

CHESTERFIELD INLET, an inlet of Hudson's bay, British North America, 250 m. long, and 25 m. across at its widest part. It receives the waters of several rivers, and contains numerous small islands.

CHESTNUT (*castanea vesca*, Linn.; *castanea vulgaris*, Lamb.), a large and handsome tree, valuable both for its timber and fruit, and growing wild in Europe and the United States. Its foliage is ample and graceful, with long patulous boughs; with oblong-lanceolate leaves, serrate with pointed teeth, and smooth and green on both sides; with clusters of sterile flowers in long, cream-colored, cylindrical catkins; and with fertile flowers 2 or 8 together in an ovoid prickly involucre at the base of the catkins. There is no corolla; the calyx is 5 or 6 lobed, placed on the summit of the 8–7 celled ovary, and enclosing 5–20 stamens, and 8–7 bristle-shaped stigmas; the nut is ovoid, coriaceous, and farinaceous. The chestnut is among the most beautiful of forest trees, and is conspicuous in the landscapes of Salvator Rosa and other masters. It is common in the forests of southern Europe from the Caucasus to England, preferring deep sandy soils and the sides of mountains, and avoiding marshy regions. It is said to have been found by the Romans first at Castanea, a town of Thessaly, near the mouth of the Peneus, whence the fruit was named by them *Castaneæ nuces*. Some of the oldest and largest trees in the world are of this species. One of the most famous is that on Mount Etna, which has often been described by travellers, and can be seen from the town of Aci. It is 160 feet in circumference, and has a hollow trunk, the interior of which serves as a retreat for shepherds and their flocks. It is called the hundred-horse chestnut, from a tradition that Joanna of Aragon once visited it, accompanied by all the nobility of Catania, and that the whole party found protection beneath it from a sudden storm. One of the oldest chestnut trees in England is at Tortworth, in Gloucestershire, which was a boundary mark in the reign of King John; and in France there is a remarkable one at Sancerre, which is believed to be about 1,000 years old, and is still very productive. This tree furnishes an excellent and durable timber, which has been thought to be the material of the roof of Westminster abbey, and of the church at Great Yarmouth, erected in the reign of William Rufus; but the wood referred to is more probably a species of oak. The fruit is eaten either raw, boiled, or roasted, or is ground into meal, and puddings, cakes, and bread made from it. It abounds especially in France, on the banks of the Rhine, and on the slopes of the Jura, the Pyrénées, and the Alps; and of the numerous French varieties the most esteemed is the *marron*. The American chestnut has sometimes been distinguished from the European as a distinct species, but upon insufficient grounds. It has, however, smaller and sweeter nuts. It is found in rocky or hilly woods from Maine to Michigan and Kentucky, and its wood is chiefly in esteem for posts and rails to construct fences. —There is a smaller American species, the chinquapin nut (*castanea pumila*, Michaux), found from Ohio to southern Pennsylvania, growing from 6 to 20 feet high, having its leaves whitened-downy underneath, and a solitary nut not half so large as the common chestnut, and very sweet and agreeable to eat.

CHEVALIER, MICHEL, a French political economist, born in Limoges, Jan. 13, 1806, studied at the polytechnic and the mining schools, and was appointed engineer in the department of Nord. After the revolution of July, 1830, he joined the disciples of St. Simon, and was intrusted with the editorship of their official organ, the *Globe*. He participated in all the proceedings of the apostles of the new faith, and also had his share of the penalties they incurred, being sentenced to a year's imprisonment; but he was leniently dealt with by the government, and released at the expiration of 6 months. He was now sent to the United States by M. Thiers, then minister of commerce, with the special mission of acquainting himself with the American system of railroads. He arrived in New York toward the end of 1832; travelled during 2 years over the United States, Mexico, and Cuba, and presented the results of his observations to the French public in a series of letters in the *Journal des débats*, which were in 1836 published in book form, under the title of *Lettres sur l'Amérique du nord*. Another work, *Des intérêts matériels en France*, which appeared in 1838, a brilliant sketch of the internal improvements planned by M. Molé, was received with equal favor. In 1840 Chevalier entered the council of state and the superior board of agriculture and trade, succeeded M. Rossi in the professorship of political economy at the college of France, and a few months later was promoted to the rank of chief engineer of mines. In his *Histoire et description des voies de communication aux États Unis*, which appeared in 1840–'42 in 2 vols., he gives a full account of the history, establishment, construction, and management of American railroads, with a view of their influence upon social intercourse. His lectures at the college of France, meanwhile, became very popular among the learned classes, and were attended not only by crowds of young men, but by all who took any interest in questions of political economy. Notwithstanding his engagements as professor and councillor of state, he never ceased his contributions to the *Journal des débats*. In 1845 he was elected to the chamber of deputies by the department of Aveyron; but his free trade doctrines prevented his reëlection. He has since become the standard-bearer of the free trade party, advocating his opinions in the *Journal des débats*, or occasional pamphlets. The *Revue des deux mondes* is also the recipient of his communications; here it was that, after the revolution of 1848, he entered the lists against Louis Blanc and the doctrines supported by him in the conferences at the Luxembourg; the papers directed against the socialist apostle were entitled *Question des travailleurs*, and had their complement in the *Lettres sur l'organisation du travail*, which appeared in the *Débats*. This contest, in which M. Chevalier evinced anti-revolutionary sympathies, caused his dismissal from his professorship during the provisional government; but he has regained official favor since the establishment of the empire, having been reinstated in his chair at the college of France, and his seat at the council of state. In 1851 he was elected a member of the academy of moral and political sciences. Beside the works already mentioned, we must cite *L'isthme de Panama, suivi d'un aperçu sur l'isthme de Suez* (Paris, 1844); *La liberté aux États Unis* (1849); *Examen du système commercial connu sous le nom de système protecteur* (1851) and *Questions politiques et sociales* (1852).

CHEVAUX-DE-FRISE, a military appliance formed by a number of pikes or spears radiating from a centre beam, and intended to form a fence impervious to cavalry. A series of them, connected by chains, is placed in the ditch, on the berme, at the entrance or behind the glacis of a field fort, or in the breach. At the siege of Badajoz, chevaux formed of sword-blades stuck in joists of timber were successfully employed to stop breaches. Modern chevaux-de-frise are formed of 4-inch iron axles, 6 feet in length, carrying 12 spears of 4 feet 9 inches, and weighing 65 lbs. They are little used, being easily knocked to pieces by artillery.

CHEVERUS, JEAN LOUIS ANNE MADELEINE LEFEBVRE DE, a French cardinal, and the first Catholic bishop of Boston, Mass., born at Mayenne, Jan. 28, 1768, died at Bordeaux, July 19, 1836. After completing his classical and theological studies, he was admitted to the priesthood in 1790, and officiated for some time as a curate at Mayenne; but on his refusal to take the oath ordered by the assembly, he left France and sought a refuge in England. There he became a teacher of French and mathematics in a private Protestant school. In 1795 he proceeded to the United

States, and joined the Catholic mission at Boston. The members of that church were then but few in number; his well-directed efforts gathered new adherents, while his affability, simple and winning manners, fluency of speech, and inexhaustible benevolence, made him popular even among other religious denominations. His labors were not limited to the city of Boston; he went to Newcastle, Maine, where he founded a Catholic church, and then spent 8 months in successful missionary labors among the Indians on the Penobscot river, and in the vicinity of Passamaquoddy bay. He was recalled to Boston, where the yellow fever was then raging with great severity, and on this occasion he gave renewed evidence of courage, devotion, and benevolence, which extended to all persons without distinction of creed. When he opened a subscription for the building of a Catholic church in Boston, he found assistance even among Protestants, President John Adams heading the list. It was probably then that he wrote to a friend: "In this country, where a few years ago a Catholic church was cursed by all, and a Catholic priest abhorred, we are now respected, loved, and highly esteemed; every one behaves with consideration toward us." In 1808 he was appointed by Pius VII. first bishop of Boston, and was consecrated as such notwithstanding his entreaties and objections. This promotion did not alter his mode of life; his episcopal residence was but a small, scantily furnished room, where he was always ready to receive those in need of assistance or of spiritual consolation. He continued to attend to the humblest duties of the ministry, and to visit every year the Penobscot Indians. After living in Boston for nearly 30 years, he was recalled to France by Louis XVIII., who appointed him to the bishopric of Montauban. At the repeated entreaties of the French king and clergy, he repaired to Montauban in 1823, where he soon gained the love of his new charge. The vicinity of Montauban having been devastated by a flood, the bishop opened his residence as an asylum to all the sufferers. His popularity throughout France became at least equal to that he had enjoyed in America. A vacancy occurring in the archbishopric of Bordeaux, he was pointed out by public opinion as the most deserving for that important station; his nomination was consequently hailed by universal applause. He was at the same time created a peer of France by Charles X., who entertained the highest regard for the venerable prelate. His career at Bordeaux was signalized by the establishment of several charitable institutions. When cholera broke out in that city, his palace was again turned into a hospital, and at the entrance he caused to be inscribed the words: *Maison de secours.* He was also instrumental in calming the exasperation of the people, who attributed the disease to poisoning. On the revolution of July he lost his rank as peer of France, and declined receiving it back at the hands of Louis Philippe. He had no taste for offices or honors of any kind, but could not prevent the king from soliciting for him the dignity of cardinal. His appointment was unanimously assented to by the popular voice; but 4 months later he was carried away by apoplexy. Huen-Dubourg has written the *Vie du cardinal de Cheverus.*

CHEVES, Langdon, an American statesman, born at Rocky River, S. C., Sept. 17, 1776, died at Columbia, June 25, 1857. He received but little early education, began to study law at the age of 18 years, entered upon his profession with superior natural qualifications and after severe discipline, and rapidly attained eminence and wealth in its practice. He was soon elected from Charleston to the general assembly, of which body he became a leader. He was a representative in the national congress before and during the war of 1812, William Lowndes and John C. Calhoun being among his associates from South Carolina, and was a zealous supporter of the party which carried the declaration of war. His speech on the merchants' bonds in 1811 was admired both for its ability and eloquence. He was chairman of the naval committee in 1812, and of the committee on ways and means in 1813, and constantly opposed the restrictive system. When Henry Clay was sent as commissioner to Ghent, Mr. Cheves succeeded him as speaker of the house, being elected by the federalists combined with the anti-restriction democrats over Felix Grundy, the candidate of the strict administration party. He retained this office till 1815, and not one of his decisions was reversed by the house. The bill for the recharter of the United States bank in 1815 was lost by his vote. He voted first to make a tie, and then gave a second and casting vote to defeat it. Declining a reëlection to congress after the close of the war, he was chosen one of the superior judges of the courts of law of South Carolina. The national bank having been rechartered in 1816, that institution under injudicious management had become hard pressed and was on the verge of stoppage in 1819, when Cheves was elected president of its board of directors. By a rigorous system of retrenchment, and by making credits only upon sufficient securities, the bank was saved, and specie payments maintained at the principal centres of commerce; but the public clamor increased against the power of an institution charged with subjecting to itself all the monetary concerns of the country, and even the national treasury. Resigning this arduous office after 3 years, he became chief commissioner under the treaty of Ghent for settling some of its provisions. He returned to South Carolina, concentrated his labors upon his plantation, and though retaining his interest in public affairs, declined to accept any further public office. Although as early as 1830 he had declared it probable that a withdrawal of the South from the confederacy would soon be the best policy, he yet refused to sanction the scheme of nullification, which he esteemed inadequate to remedy the causes of discontent. Though advocating a southern confederacy, he opposed the unsupported action of a single state as suicidal. In 1850 he became a delegate to the Nashville convention, in which he spoke with his accustomed vigor and eloquence, and in 1852 was a member of the state convention of South Carolina, in which he exerted his influence against the idea of separate state secession. As a literary man he is known not only by his speeches, but by many occasional letters and reviews. He was buried with public honors in the Magnolia cemetery, near Charleston.

CHEVIOT HILLS, a mountain range, extending from N. E. to S. W. between England and Scotland. They afford good pasturage for sheep, and give their name to a fine breed of that animal. They were the scene of many bloody battles between the Scotch and English, the most famous of which is that immortalized in the celebrated ballad of "Chevy Chase." Cheviot peak is 2,684 feet above the sea level.

CHEVREUL, Michel Eugène, a French chemist, born at Angers, Aug. 31, 1786, studied chemistry under Vauquelin, and was successively professor of chemistry at one of the colleges of Paris, examiner at the polytechnic school and director of the dyeworks, and professor of special chemistry at the Gobelins. In this last position he signalized himself by researches into the æsthetics of colors. He also gave lectures on the same subject by invitation of the chamber of commerce of Lyons. He illustrates the optical effects of light and shadow on silk stuffs, by observing contiguous metallic rollers from 4 different points of view, namely, according as they are parallel or perpendicular to the plane of the luminous rays, and as the observer has his back or face to the light; hence he recommends to produce desired effects by causing greater or less reflection of light from the warp or woof of fabrics. Changeable or shot silks are indebted for their chameleon hues to an adaptation of Chevreul's theory. In 1829 he succeeded Vauquelin as professor of practical chemistry at the *jardin des plantes*, and in 1852 received from the society for encouragement of useful inventions the prize of 12,000 francs for his work "On the Chemistry of Fatty Substances," which he had written 30 years previous, and which is yet of high value, its suggestions having given rise to the manufacture of stearine candles, and the use of oleic acid in the preparation of wool for cloth. Another work of his, on sanitary influences, introduced the practice of charring the interior of water casks. Chevreul received a premium at the London world's fair in 1851, for the benefit his labors have conferred on industry. At the age of 72 he is still (1858) intellectually vigorous, and is engaged in preparing a history of chemistry.

CHEVREUSE, Marie de Rohan Montbazon, duchesse de, a French lady celebrated for her beauty, wit, and intrigues, born in 1600, died in 1679. When scarcely 17 years old, she married Charles d'Albert, grand constable of France, then a favorite of Louis XIII., who died 4 years afterward. She next became the wife of Claude de Lorraine, duke of Chevreuse. A great friend of Anne of Austria, she incurred the hatred of Richelieu, and succeeded so well in making herself obnoxious to him, that he determined to have her arrested; but, made aware of his project, she assumed man's attire, crossed the Somme by swimming, and fled to England. For years she was an exile from France, and King Louis XIII. had been inspired by his minister with such fear of her uncontrollable spirit and cunning, that in his will he forbade her return to France. In spite of this, Anne allowed her to return, without, however, showing her the same degree of confidence as before, and the queen's coldness induced the duchess again to leave the court. Afterward she engaged in new plots against Mazarin, mostly acting in concert with Cardinal de Retz, and was once more compelled to leave France. Her intriguing spirit outlived her beauty, which had so much contributed to her former successes. She wandered through the Netherlands, Germany, and England, still persisting in plotting against her enemies.

CHEYNE, George, an English physician, born in Scotland about 1670, died at Bath in 1742. He was first intended for the church, but having attended the lectures of Dr. Archibald Pitcairn, he devoted himself to medicine, and gained a high reputation by his writings, of which he published a great number, although his health was much impaired. His most popular work was a treatise on the "English Malady," that is, on spleen, vapors, hysterics, and hypochondriacal diseases in general, with a minute account of his own case (London, 1734).

CHEYNELL, Francis, a nonconformist English divine, born in Oxford in 1608, died at Preston, Sussex, in 1665. He entered Oxford university in 1623, and at first took orders in the church of England, but in 1640 sided with the parliament, and in 1643 was made one of the assembly of divines. In 1646 he was one of the delegation to convert the university of Oxford to the parliamentary cause, and in 1648 took forcible possession of the Lady Margaret professorship of theology in that university, and also of the presidency of St. John's. But, unable to retain them, he retired to the living of Petworth, which had been presented to him, where he remained until the restoration, when he was ejected. Cheynell had previously published a work entitled "The Rise, Growth, and Dangers of Socinianism," in which he had violently accused Chillingworth, Archbishop Laud, and others, of Socinian tendencies. As soon as Chillingworth was fairly buried, Cheynell published a book entitled "*Chillingworthi Novissima;* or Sickness, Heresy, Death, and Burial of William Chillingworth" (1644).

CHÉZY, Antoine Léonard de, a French orientalist, born at Neuilly, Jan. 15, 1773, died in Paris, Sept. 3, 1832. In 1798 he was appointed a member of the learned commission who were to accompany Bonaparte to Egypt, but was prevented from continuing in the expedition by illness. In 1815, a chair of Sanscrit was created for him at the college of France. His most important works are: *Medjouin et Leila*, translated from the Persian of Djani; *Yadjanadatta Badha*, an episode translated from the *Ramayana*, a Sanscrit poem of Valmiki; *La reconnaissance de Sakountala*, a drama of Calidasa. This last publication, giving for the first time the text with an elegant translation, was printed at the expense of the Asiatic society of Paris. His papers in the *Journal des savants*, the *Journal Asiatique*, and the *Mémoires* of the academy of inscriptions are also important. Among the manuscripts he has left we must mention a *Chrestomathie Persane*, a *Chrestomathie Sanscrite*, a *Grammaire Sanscrite*, and a *Vocabulaire Sanscrit, Pracrit et Français*.

CHIAPA, or Las Chiapas, the southernmost state of the Mexican confederation, situated between Tabasco and Guatemala, comprising the northern slopes of the table-lands of Guatemala, and watered by the rivers Usumasinta, Tabasco, and their tributaries; area 18,679 sq. m.; pop. 161,914, chiefly Indians. European grains are cultivated on the uplands; the valleys produce vanilla, cocoa, hemp, maize, tobacco, pimento, indigo, and sugar. Vanilla, cocoa, and logwood are the chief exports. Capital, Ciudad Real or San Cristoval. The famous ruins of the ancient Palenque are in the N. E. part of this state. The expenditures of Chiapa in 1856 were $42,523. The state is divided into 4 departments and 9 districts.

CHIARO-SCURO, an Italian word, sometimes rendered in English by the term "clear-obscure," which is used in painting to designate the distribution of the lights and shadows of a picture in such a manner that the objects may be naturally and effectively relieved from one another. It comprehends all the lights and darks of a picture, and particularly refers to their arrangement in masses on opposite sides. Correggio, Leonardo da Vinci, Giorgione, and particularly Rembrandt, were the chief masters of the art of *chiaro-scuro*.

CHIAVARI, a province of the district of Genoa, kingdom of Sardinia, bordering on the gulf of Rapallo, and watered by the rivers Sturla, Vara, and Rapallo; area, 353 sq. m.; pop. 116,000.—Chiavari, the capital of the above-described province, and one of the most considerable towns of the ancient Genoese territory, is situated in a fertile region, on the shores of the gulf, and at the mouth of the river Sturla; pop. 10,610. It is a curious place, with narrow streets, open Gothic arcades, substantial houses of remarkable architecture, picturesque towers, and handsome churches. It contains a Franciscan convent, a hospital, an ecclesiastical seminary, and a public library. It has an agricultural and artistic association of some note, manufactures of lace, twist, and beautiful articles of cabinet ware, anchovy fisheries, and good quarries of marble and slate in the neighborhood. Pope Innocent IV. was born in this town.

CHIAVENNA (anc. *Clavenna*), a town of Lombardy, province of Valtellina, on the river Maira, 20 m. W. N. W. of Sondrio; pop. 3,530. It is the capital of a district of its own name, is surrounded by walls, and is well built. The baptistery of one of its 6 churches is remarkable for some interesting antiquities and specimens of mosaic work executed in bones. A castle, a town hall, and a hospital are the chief other buildings. The town derives its importance from its situation at the junction of the Septimer and Splügen roads, the great thoroughfares of trade between Switzerland and Italy, with both which countries it has an active commerce. It manufactures paper, wine, amianthus cloth, pottery, and silk, the last being the staple.

CHICACOLE, Cicacole, or Sikakol, a town of British India, in the district of Ganjam, presidency of Madras, situated on the N. bank of the Naglandee river, near the bay of Bengal, lat. 18° 18′ N., long. 83° 58′ E., 415 m. S. W. of Calcutta, and 435 m. N. E. of Madras; pop. about 50,000. It was one of the chief towns of a former district of its own name, which constituted one of the 5 political divisions of the northern Circars. It is irregularly built on rising ground, contains several mosques, one of them of high reputed sanctity, built about 1641, and has a military cantonment, not much used. It has long been noted for manufactures of muslin. In rainy weather its streets are overflowed to a considerable depth.

CHICAGO, the largest city of Illinois, capital of Cook co., situated on Lake Michigan, at the mouth of the Chicago river, 18 m. N. of the extreme S. point of the lake; lat. 41° 54′ N., long. 87° 38′ W. The Chicago river affords the only good harbor on the W. side of the lake near its S. extremity, and to this fact the city owes all its importance. The name is of Indian origin, and is mentioned by the French Jesuit missionary Marquette, who first visited it in 1673. It was also visited by Perrot in 1770. In the winter of 1674–75 Marquette camped near the present site of the city from Dec. till near the close of March. When he arrived, on Dec. 4, he found the river frozen over and the ground covered with snow. By the French voyageurs the name of the city is spelled in a variety of ways, the majority rendering it Chicagou. The first fort, Dearborn, was built by the U. S. government on the point S. of the river, near its mouth, in 1804. When the war with Great Britain broke out in 1812, the government, apprehensive that a post among the Indians, so far from the frontiers, could not be successfully maintained, ordered it to be abandoned. On Aug. 12, Capt. Heald marched out of the fort, and after proceeding some 2 m. on the lake shore he was attacked by the Potawatomie Indians. Twelve, being the entire number, of the militia, 26 of the regular troops, 2 women and 12 children, in all

53, were killed, and several wounded. The Indians destroyed the fort; but it was rebuilt in 1816, under Capt. Bradley. Some of the old buildings of the fort are still standing near the marine hospital. The fort continued to be occupied till 1837, when, the Indians having left the country, it was abandoned. On March 2, 1827, congress granted to Illinois every alternate section of land for 6 m. on either side of the line for the proposed Illinois and Michigan canal, to aid in its construction, from Chicago to the head of navigation on the Illinois river. The state accepted the grant, and on Jan. 22, 1829, organized a canal board with power to lay out towns along the line. These commissioners employed Mr. James Thompson to survey the town of Chicago, and his first map of it, now in the recorder's office, bears date Aug. 4, 1830. In 1831 Chicago contained about a dozen families, beside the officers and soldiers in Fort Dearborn. The town of Chicago was organized by the election of 5 trustees, Aug. 10, 1833. There were then in all 28 voters, of whom 9 are still living in the city. On Sept. 26, 1833, a treaty was signed with the chiefs of the Potawatomies, 7,000 of the tribe being present at the council, and on Oct. 1 they were removed W. of the Mississippi. The first charter of the city was passed by the legislature and approved March 4, 1837. The first election was held under the charter May 1, 1837. The first census was taken July 1, 1837, when the entire population was shown to be 4,470. The city then contained 4 warehouses, 398 dwellings, 29 drygoods stores, 5 hardware stores, 3 drug and 19 grocery and provision stores, 10 taverns, 26 groceries, 17 lawyers' offices, and 5 churches. The population in 1850 was 28,269; in 1853, 60,652; in 1855, 83,509, and in 1857, 130,000, having doubled about every 4 years.—The site of Chicago appears to the eye to be a dead level. The level of the engineer, however, proves that the height of the ground within the city limits varies from 3 to 24 feet above the lake. The grade of the principal streets has been raised from 2 to 8 feet above the original surface. An efficient board of commissioners is now (1858) engaged in perfecting and in executing a complete system of sewerage. The broad streets are being paved or macadamized. Relatively the site of Chicago is low, and the surrounding prairie for many miles is comparatively without variation of surface; but the city really stands on the dividing ridge between the two great rivers that drain half the continent, 600 feet above the ocean. In Indian times there was here but ½ league of portage for canoes from the waters of Lake Michigan to those which run into the Mississippi, and at high water they passed from the one to the other without any obstruction whatever.—The Chicago river has very little perceptible current, and indeed for 3 or 4 m. it is very nearly on a level with the lake. Both branches are navigable for vessels for some 4 m. from the mouth. The 2 branches, one from the N. and the other from the S., unite about a mile from the lake, from which point the main stream runs nearly due E. through the heart of the city. The river and branches, taking both sides, afford some 18 miles of wharves and slips. The city is divided by the river and branches into 3 parts, familiarly known as the N., S., and W. sides. Bridges placed upon a turn-table or pivot are thrown across the river at many points. Vessels are generally towed up and down the river by steam tugs, and unless the harbor happens to be crowded with vessels by a N. E. wind, very little inconvenience is experienced in passing from one division of the city to another. By the Sault Ste. Marie ship canal, steamers and vessels of the largest class are enabled to trade to all the ports on Lake Superior, bringing the copper and iron ores of that region at very small cost to the wharves of Chicago. The Welland canal, between Lakes Erie and Ontario, admits sailing vessels and propellers from Lake Michigan to Oswego, Montreal, and to the ocean itself. It is proposed also to construct a ship canal capable of passing vessels of 1,000 tons from the head of Georgian bay to Toronto. The coasting trade of the lakes alone of which Chicago is the head embraces some 3,000 m. of coast line. In the summer of 1856 the Dean Richmond was loaded with wheat at the wharves of Chicago and Milwaukee, and discharged her cargo in Liverpool. In the summer of 1857 the Madeira Pet arrived at Chicago with crockery, iron, &c., direct from England. On the return trip she was loaded with hides and lumber. In the summer of 1858 several vessels cleared from lake ports for Europe. The Illinois and Michigan canal, 100 m. long, connects Chicago with Lasalle, at the head of navigation on the Illinois river. This canal was completed and opened for business in the spring of 1848, and gave a great impetus to the growth and prosperity of the city. The Mississippi is now reached by rail from Chicago at Cairo, St. Louis, Alton, Quincy, Burlington, Rock Island, Fulton, Galena, Dubuque, and Prairie du Chien. In 1850 there were but 40 m. of railway centering in Chicago; there are now completed and in operation 3,953 m., and the total earnings of all the roads for the year 1857 amounted to $18,590,520 26. More than 100 trains of cars daily arrive and depart from the city.—As early as 1854 it was announced that Chicago was the largest primary grain depot in the world; that is, that more grain was there collected directly from the producers than elsewhere. The following tables illustrate the extent of this trade:

TOTAL RECEIPTS.

	1854.	1855.	1856.	1857.
Wheat, bush....	3,038,955	7,535,097	8,767,760	10,554,761
Corn...........	7,490,758	8,532,377	11,888,398	7,409,130
Oats............	4,194,855	2,947,188	2,219,897	1,707,245
Rye.............	85,691	68,066	45,707	87,911
Barley.........	201,764	201,595	128,457	127,689
	15,011,548	19,284,643	23,050,219	19,886,736
Flour into wheat	792,875	1,203,310	1,624,605	1,969,670
Total.......	15,804,423	20,487,953	24,674,824	21,856,406

TOTAL SHIPMENTS.

	1854.	1855.	1856.	1857.
Wheat, bush....	2,306,725	6,298,155	8,337,420	9,485,052
Corn	6,837,899	7,517,625	11,129,668	6,814,615
Oats	3,229,967	1,899,566	1,014,548	416,778
Rye.............	41,157	19,318	599	....
Barley..........	148,421	92,032	19,051	17,998
	12,864,155	15,816,718	20,501,276	16,734,438
Flour into wheat	538,185	817,095	1,061,945	1,298,240
Total.......	12,902,320	16,633,818	21,583,221	18,032,678

Grain is all received and shipped in bulk, and such is the perfection of the machinery that it can be done at a fair profit for half a cent per bushel. It is received into immense warehouses, which are furnished with elevators for raising it to the top, driven by powerful steam engines, and many of which can receive and ship 100,000 bushels each day. The following is a table of the beef-packing business from 1851 to 1857, inclusive:

	No. Cattle.	Av. weight.	Total weight, lbs.	Bbls. p'ked.
1851	21,806	....	....	....
1852	24,663	542	13,367,846	46,395
1853	25,431	563	14,019,905	57,500
1854	23,691	565	13,402,223	54,108
1855	28,972	572½	16,932,187	62,687
1856	14,977	543	8,130,496	33,058
1857	19,127	540	10,354,500	42,100

NET PRICES OF BEEF FOR FOUR YEARS.

Mos.	1854.	1855.	1856.	1857.
Sept...	$6 00 @ 6 50	$6 50 @ 7 50	$5 50 @ 6 50	$6 00 @ 7 00
Oct...	5 50 @ 6 25	5 50 @ 6 25	5 50 @ 6 75	5 00 @ 6 00
Nov...	5 50 @ 6 50	6 00 @ 6 50	5 50 @ 6 50	4 00 @ 5 00
Dec...	4 50 @ 6 00	6 50 @ 7 00	5 00 @ 6 75	4 00 @ 5 00

VALUE OF BEEF PACKED FOR SIX SEASONS.

1852..............	$650,621 00	1855..............	$1,152,420 96
1853..............	865,949 85	1856..............	603,112 72
1854..............	865,778 11	1857..............	656,507 68

The following table shows the shipments of cattle for 6 years:

	No.		No.
1852..................	77	1855..................	8,253
1853..................	2,657	1856..................	22,502
1854..................	11,221	1857..................	25,502

Shipments of cattle are mostly made by railway to the New York market. Owing to the commercial revulsion toward the close of 1857, and through the winter of 1858, the traffic in swine fell off considerably. The following table shows the shipments of hogs for 5 packing seasons:

	1852-'3.	1853-'4.	1854-'5.	1855-'6.	1856-'7.
By Lake..........	....	....	185	1,016	....
Mich. South'rn R. R.	....	846	17,464	57,885	18,250
Mich. Central "	10,000	9,782	35,232	125,868	81,284
Chicago & Mil. "	....	....	....	3,000	3,000
	10,000	10,628	52,881	187,768	106,074
Packed in Chicago.	48,156	52,849	73,684	80,380	74,000
City trade.........	7,002	10,503	12,000	40,396	48,628
Total.........	65,158	73,980	138,565	308,539	220,702

The lumber trade of Chicago is also very large. Pine lumber is brought there by steamer and sailing vessel from the extensive districts of Michigan, Canada, and Wisconsin, and is distributed by railways and canals as building material for new towns and cities on the prairies. The following is a table of the receipts of lumber from 1847 to 1857, inclusive:

	Lumber, ft.	Shingles.	Lath.
1847..........	32,118,225	12,148,500	5,655,700
1848..........	60,009,250	20,000,000	10,025,109
1849..........	73,259,553	39,057,750	19,281,733
1850..........	100,364,779	55,423,750	19,809,700
1851..........	125,056,437	60,338,250	27,583,475
1852..........	147,816,232	77,080,500	19,759,670
1853..........	202,101,098	93,483,784	39,133,116
1854..........	228,336,783	28,061,250	82,431,500
1855..........	306,553,467	158,770,000	44,457,350
1856..........	556,673,169	135,876,000	79,235,120
1857..........	459,639,193	131,832,250	80,130,000

The total value of the commerce of Chicago, as shown by an able report of Col. J. D. Graham, U. S. army, which passed over the St. Clair flats in 1855, was $118,500,254 89. If the value of the traffic upon the 3 great eastern railways, the Michigan Central, the Michigan Southern, and the Pittsburg, Fort Wayne and Chicago, with that of the Illinois and Michigan canal and the railways running S. and W. of the city, could be ascertained, it would swell the amount to many millions more. The following table shows the number and tonnage of vessels arriving in the port of Chicago for 4 years:

	Total.	Tonnage.	Men.
1854....................	5,021	1,092,644	....
1855....................	6,610	1,608,845	....
1856....................	7,328	1,545,379	[illegible]
1857....................	7,557	1,753,413	[illegible]

There were laid up in winter quarters in this port, 1857-'58, 7 steamers, 20 propellers, and 214 sail vessels. The following table shows the population of Chicago at different periods:

1840............	4.470	1850............	28,269
1843............	7.580	1852............	38,733
1845............	12,088	1853............	60,652
1846............	14,169	1854............	65,872
1847............	16,859	1855............	83,509
1848............	20,035	1856............	110,000
1849............	23,047	1857............	130,000

The assessed value of the property of the city for 1857 was as follows:

Personal..........................	$7,027,688
Real..............................	29,307,693
Total.........................	$36,335,381

It should be stated that, by the present system of assessment, these figures do not represent more than from ¼ to ⅓ of the actual value of the property of the city. The manufactures of Chicago are still in their infancy. There are no statistics in detail showing the amount of manufactures for the year 1857. The following table shows the facts of 1856:

	Capital.	Hands.	Val. M'fs.
Iron works, steam engines, &c.	$1,768,900	2,966	$2,387,834
Stoves..........................	185,000	70	224,000
Agricultural implements......	597,000	573	1,124,000
Brass and tin ware, &c.........	257,000	351	471,000
Carriages, wagons, &c..........	356,000	331	948,160
Highwines, beer, ale, &c.......	497,000	105	1,150,000
Soap, candles, lard, &c........	296,000	100	388,681
Furniture......................	354,000	504	562,000
Stone, marble, &c..............	617,950	543	394,175
Planing mills, sash, doors, &c..	445,000	534	1,092,397
Musical instruments..........	13,900	31	37,000
Leather.........................	332,000	126	482,000
Barrels, wooden ware, &c.....	179,700	171	337,250
Brick...........................	300,000	500	712,000
Flour...........................	325,000	73	684,500
Chemicals.......................	15,000	15	32,000
Harness, saddles, &c...........	82,900	220	371,000
Sheet and bar lead.............	25,000	75	108,000
Glue and neat's foot oil........	20,000	15	25,000
Starch, &c......................	15,000	25	75,000
Daguerreotypes, ambrotypes...	75,000	75	108,000
Engraving, &c..................	11,000	30	28,000

	Capital.	Hands.	Val. M'rs.
Cigars	8,050	26	16,800
White lead	50,000	10	7,200
Types, &c.	....	20	....
Boots, shoes, clothing, and other manufactures	500,000	1,750	750,000
Miscellaneous	489,700	502	1,044,697
Total	$7,759,400	10,578	$15,515,068

In 1857 there were 137 manufacturing establishments propelled by steam. During the summer of 1858 a rolling mill, which employs 200 men, has been established, for rerolling worn-out railway iron. In a city growing so rapidly as Chicago, the material for building is an important element of progress. The statistics of the lumber trade have already been given. The best of bricks are manufactured readily in all parts of the city. The widening of the river and the building of slips furnish large quantities of clay for this purpose. Chicago bricks are very hard and durable, but their color is dull and grayish. Beautiful cream-colored bricks are brought from Milwaukee, and fine red bricks from Buffalo. The Athens marble, so called, is regarded as one of the finest building stones in the world. It is quarried only 20 m. from Chicago, directly on the banks of the canal. It is found in vast quantities, is easily worked when first raised, but becomes exceedingly hard when exposed for a few months. The following table shows the cost of the public and private improvements for the 4 years ending with 1857:

1854	$2,438,910	1856	$5,708,624
1855	3,735,254	1857	6,423,518

Among these improvements should be noticed the city water works, which furnish an abundant supply of pure lake water.—Among the newspapers of the city, the "Democrat" is the oldest; its first number was issued Nov. 26, 1833. There are now the "Democrat," "Press and Tribune," "Evening Tribune," "Evening Journal," "Times," and "National Union," published daily in the English language, and the Illinois *Staats Zeitung* and the *National Demokrat* in the German. Each of these issues a weekly; the "Press and Tribune" and the "Journal" a tri-weekly edition. Almost all the leading religious denominations publish weekly papers devoted to their interests. The entire number of newspapers is as follows: 8 daily, 2 tri-weekly, 16 weekly, 2 semi-monthly, and 5 monthly.—The public schools of Chicago afford to every child in the city the means of education free of any charge. At the head of the system stands the high school, the pupils of which are the graduates from the grammar schools. Here the classics, the sciences, and the higher branches of an English education are taught, and the child of the poorest man in the city may aspire to the highest honors. There are 10 public grammar schools, most of which have large substantial buildings, some of them capable of accommodating 1,000 children. The principal of the school fund amounts to $977,000, and any deficiency in the expenses of the system is made up by an appropriation from the school fund of the state, and by a direct tax upon the property of the city. The city has also a reform school, where every effort is made to teach vagrant children their duties, and to save them from vice and ruin. The Rush medical college also furnishes instruction to those who wish to pursue their studies in that profession. The Methodists have a largely endowed college and biblical institute, at Evanston on the lake shore, 11 miles from the city by railroad. The Baptists, the New and the Old School Presbyterians, and the Roman Catholics have each in or near the city colleges in operation, or endowments and matured plans for future effort. It is estimated that the leading religious denominations have already secured present and prospective endowments for literary and theological institutions to the value of at least $1,500,000. The mechanics have a flourishing institute with a valuable library. The Chicago historical society is doing most important service in collecting and preserving the historical records of the city and of the entire N. W. country. It has a valuable and rapidly increasing library.—The Methodists were the pioneers among religious connections in Chicago. They were represented there in 1831–'2–'3 by the Rev. Jesse Walker. The first quarterly meeting was held in the fall of 1833, and in the spring of 1834 the first regular class was formed. The 1st Presbyterian is the oldest church in the city. It was organized June 26, 1833, by its first pastor, the Rev. Jeremiah Porter. It consisted at the time of 25 members from the garrison and 9 from the citizens of the town. St. James's, the oldest Episcopal church, was organized in 1834. The 1st Baptist church was organized Oct. 19, 1833. The 1st Roman Catholic church was built by the Rev. Mr. Schofler in 1833–'4. The number of churches now in the city is as follows: 14 Methodist, 10 Roman Catholic, 6 Baptist, 9 Episcopal, 6 Congregational, 5 New School and 2 Old School Presbyterian, 2 Reformed Dutch, 6 Lutheran, 2 German Evangelical, 2 Jewish, 2 Swedenborgian, 2 Scotch Presbyterian, 2 Universalist, 1 Unitarian, and 1 Bethel.

CHICHEN, a village of Yucatan, 18 m. S. W. of Valladolid. It occupies the site of an ancient Indian city, some remains of which are still visible. The ruins of a temple 450 feet long, a pyramid 550 feet square at the base, and a remarkable edifice, surmounted by a dome and covered with elaborate sculptures, called the house of the caciques, are the most interesting monuments of this ancient place.

CHICHESTER (anc. *Regnum*), an episcopal city, parliamentary and municipal borough, and county in itself, capital of the co. of Sussex, England, at the termination of a gentle slope from the South Down hills, 79 m. S. W. of London, by the Portsmouth branch of the South Coast railway; pop. in 1851, 8,662. It is surrounded by an old but well preserved wall 1½ m. in circuit, lined with elms, and forming a pleasant walk. There are 4 main streets radiating from a central square, where there is an elegant cross erected in 1478. Most of the thoroughfares are wide, nearly straight, and lighted with gas. The system of drainage is good, and the supply of water is abundant. Most of the houses are of brick with tiled roofs, and many are built with considerable taste. The principal edifice is the cathedral, erected in the 13th century, and exhibiting specimens of nearly every style of Gothic architecture. It is not large, but has a remarkably graceful spire, built in the 14th century, and is generally well proportioned. One of its most striking features is a monument to the poet Collins, who was born and died in this city. It has 8 other modern monuments by Flaxman, and many more of some antiquity. The extreme length of the cathedral is 407 feet, and its breadth 150 feet. The transept is 129 feet long by 34 feet broad; the tower and spire are 300 feet high. Near the N. W. angle is a massive bell tower, 120 feet high, and on the S. is a quadrangle enclosed by cloisters and containing the churchyard. The bishop's palace and gardens are close by. There are 9 parish churches, one or two chapels, places of worship for dissenters, and a number of schools, among which is a blue coat school founded in 1702 and enjoying an income from endowment of £1,800 per annum. It has 28 pupils, such of whom as conduct themselves well receive on leaving a sum to enable them to set up in business. There are also a prebendal grammar school, supposed to date from the foundation of the cathedral, a diocesan theological college, and a training college founded by Bishop Otter in 1841, with a model school attached to it. Among the other institutions are a library and reading room, a literary and philosophical society, a handsome infirmary, alms houses, St. Mary's hospital for the support of 12 aged poor persons, a theatre, a corn exchange, a gaol, a town hall, originally part of a priory, and a council chamber. Two hundred years ago nearly all the needles made in England came from this town, but the only manufactures now are coopers' and other wooden ware, leather, parchment, and candles. Extensive corn and cattle markets are held, the latter every 2d Wednesday, ranking with the most important in the kingdom. The town has communication with the sea at Chichester harbor, by means of a branch of the Arundel canal, used chiefly for the transportation of coal. The name Chichester is supposed to be a corruption of Cissanceaster, the city or castle of Cissa, an Anglo-Saxon chief who repaired it after its partial destruction by the South Saxons under Ælla in 491. It was the capital of the kingdom of Sussex till its conquest by the West Saxons. In Dec. 1642, the parliamentary forces took it from the royalists, and in 1648 the parliament caused its fortifications to be destroyed. It gives the title of earl to the Pelham family. The see of Chichester was originally founded at Selsea in the 7th century, and removed to Chichester toward the end of the 11th century. The diocese includes the entire county of Sussex, and comprises 311 benefices. There are 2 archdeaconries, Chichester and Lewes. The income of the bishop is £4,200 a year. Chichester sends 2 members to parliament.

CHICKAHOMINY, a river of Virginia, rises in Hanover co., and falls into York river, about 8 m. above Jamestown. It separates Henrico and Charles City counties on the right from Hanover, New Kent, and James City counties on the left.

CHICKASAW. I. A N. E. co. of Miss., with a level surface and fertile soil; area about 990 sq. m.; pop. in 1850, 16,369, of whom 6,480 were slaves. It was ceded to the state by the Chickasaw Indians, and since its organization in 1836 has had a rapid growth. The Oktibbeha, Looascoona, and Yallobusha rivers, all of which are navigable by keel boats, are the principal streams. In 1850 the productions of this county amounted to 9,644 bales of cotton, 771,452 bushels of corn, and 111,815 of sweet potatoes. There were 20 churches, and 592 pupils attending public schools. Capital, Houston. II. A N. E. co. of Iowa, recently erected; area 576 sq. m.; pop. in 1856, 2,651. Prairies and forests occupy most of the surface. Comparatively little of the land has been improved, and corn is the principal production.

CHICKASAWS, one of the Appalachian tribes of American Indians, who occupied the territory bounded N. by the Ohio, W. by the Mississippi, E. by a line drawn from the bend in the Cumberland river to the Muscle shoals of the Tennessee, and S. by a line near the 34th degree of N. latitude. De Soto encountered them in 1540 in the northern part of the state of Mississippi, and encamped through the winter in Chicaça, one of their villages. When spring opened, he demanded from them, as he had from other tribes, 200 men to carry the burdens of his company. The savages refused, and, rivalling the virtue of more famous nations, burned their village in order to expel their invaders. From that time, though a small tribe, they maintained the reputation of being the most intrepid and independent warriors of the south. The next European who visited them was Marquette, in 1673, and he found them in possession of guns, probably obtained through Virginia. According to their own tradition, they came originally from the west. When about to start eastward, they were provided with a large dog as a guard and a pole as a guide. As they marched they planted the pole in the ground every night, and in the morning looked at it and went in the way it leaned. They crossed the Mississippi, in which their guardian dog was drowned, and arrived on the Alabama, where their pole, after being unsettled for several days, at length pointed southwest. They proceeded in that direction to what is known as the Chickasaw old fields, where the pole remained perfectly upright. The name Alabama, meaning in their language "Here we rest," is commemorative of this tradition. In this vicinity they dwelt till they migrated westward of Arkansas in 1837 and 1838. After their settlement they had several wars with the neighboring tribes, the Choctaws, Creeks, Cherokees, Kickapoos, and Osages, all defensive, and in all of which they were victorious. When the French were seeking to establish their supremacy throughout Louisiana, the Chickasaws were their most dreaded enemies, and they were at the same time faithful and friendly to the English traders from Carolina. The Chickasaw canoes attacked the French boats navigating backward and forward from Illinois to New Orleans, and made every French settlement in the eastern valley of the Mississippi unsafe. In 1736 the whole strength of New France, assisted by a large party of Choctaws, was exerted for the subjection of this haughty tribe; yet the result of the expedition against them was that Bienville, one of the commanders, was forced to an inglorious retreat, and D'Artaguette, the other commander, was captured and burned at the stake. The French attacked them again in 1739 from Chickasaw bluff, where Memphis now stands, but gained no advantage. The Chickasaws not only protected themselves, but at the same time formed a barrier against the French to the English settlements on the west. When, soon after, Gov. Oglethorpe of Georgia was threatened by the Spaniards of Florida, the Chickasaws sent to him a deputation of 30 warriors proffering him their alliance, and they remained his unwavering friends. By a treaty concluded in 1786, friendship was established between them and the United States, their territory being too far removed from the frontiers to expose them much to collision with the back settlers. By a treaty in 1801 they conceded the right to open a road through their territory from Nashville to Natchez. In 1807 congress voted an appropriation of $22,000 to them, in payment for lands amounting to 345,000 acres which they had already ceded. For another large cession in 1816 they received $4,500 down, and an annuity of $12,000 for 10 years. In 1818 they ceded all that tract included between the Mississippi and the northern bank of the Tennessee river, for which they received $70,000 annually for 15 years. In 1833 they ceded all their remaining lands in Mississippi, amounting to 6,422,400 acres, for which they received $3,646,000; and they now prepared to migrate westward to unoccupied lands furnished them by the United States.—The government of the Chickasaws was a hereditary monarchy, their king being styled *minko*. There were, however, chiefs of various ranks who could oblige the king to call a council, and by a unanimous vote could pass a law even if the king refused. Through the agency of the national government, by the convention of 1837, a political connection was established between the Chickasaws and their kinsfolk, the Choctaws, by which the former were made a component part of the Choctaw nation and subject to its laws. Thus the Chickasaws have been obliged to live under a republican government, though they have made persevering efforts to break their connection with the Choctaws. The 2 tribes went in close league beyond the Mississippi, and occupy together the south-western portion of the Indian territory. They are much intermingled, having a common legislature, a general council, and all matters of government being conducted as if they were one tribe. Their annuities and school fund, however, are kept distinct. In their new seat the Chickasaws have made progress in numbers, intelligence, and the arts of civilized life. Their funds in the hands of the national government, for lands ceded by them, are ample to educate every member of the tribe, and to make liberal provision for their progress in agriculture and mechanical skill. In 1853 their population was 4,715, nearly 1,000 more than during the latter part of their residence in Mississippi. In that year they had also 5,000 horses, 6,500 neat cattle, 100,000 hogs, and 2,000 agricultural implements. They raised 220,000 bushels of grain, and cultivated 750,000 acres of land, 60,000 acres of which were planted with corn. They receive a permanent annuity of $3,000, and possess an investment in state stocks, guaranteed by the United States, yielding an income of $4,416 39; $3,000 are pledged for the support of orphans, and $2,000 for that of incompetent persons. They early adopted the policy of investing the proceeds of their lands in public stocks, and are believed to be in their fiscal means and policy in advance of any other tribe in America.

CHICKEN POX (*varicella*), an exanthematous disease, characterized by the eruption of small vesicles appearing in successive crops. It is confined almost exclusively to children. The eruption is preceded by more or less fever for a day or two; it appears first on the back, neck, and breast, whence it spreads to the face, limbs, and body. The eruption is very early, if not from the beginning, vesicular, resembling drops of water about the size of split peas, the contained fluid being transparent or straw-colored; they sometimes run together, and assume a conical or globular form, which has given rise to the described varieties; they are usually surrounded by slight redness, and accompanied by considerable itching, which causes them to be very soon broken. About the 5th day they begin to dry up into scales, which fall off in a few days, leaving a discoloration and sometimes a slight permanent pitting of the skin. Sometimes the contents of the vesicles become pustular, accompanied by higher and more lasting fever; English writers call such cases swine pox. The Latin name *varicella* is a diminutive of *variola* (small pox), from the opinion which formerly prevailed that the 2 diseases were nearly allied, that variola, varioloid, and varicella were all varieties of small pox; but chicken pox is now generally considered a distinct affection. It may be distinguished from small pox by its mildness, vesicular character, and the successive appearance of its eruption; though some severe cases are with difficulty distinguished from mild varioloid. It occurs in persons who have been vaccinated and who have had small pox, and in those who have not experienced vaccination, varioloid, or variola; though often prevalent at the same time with variola, it has not been known to communicate the varioloid or the small pox; it is not certain that it can be transmitted by inoculation, and it is generally considered very slightly, if at all, contagious. It is a disease unattended with danger, unless from accidental complications, and requires no treatment other than attention to diet, mild laxatives, and cooling drinks.

CHICKEN SNAKE, a name given in the northern states to the *coluber eximius* (De Kay), *ophibolus eximius* and *O. clericus* (Bd. and Gd.). The head is short and the snout rounded; the nostrils are lateral, the eyes large, with a dusky pupil and gray iris; the neck is contracted, the body long but robust, covered with smooth, small, hexagonal scales above, and with broad plates below; the tail is short, thick, soon becoming cylindrical, and ending in a horny tip. The color, as described by Holbrook, is milky white above, sometimes tinged with red; along the vertebral line is a series of dusky oval spots, bordered with black, sometimes giving the appearance of transverse white and black bands (as described in Storer's report on the Massachusetts reptiles); alternating with these bands on the sides is another series of smaller rounded and blacker spots, and sometimes a 3d smaller series lower down; the upper lip is milky white; the abdomen is silver white, sometimes yellowish, each plate marked with one or two black spots, quadrilateral, near the centre if single and near the margins if double, giving a tessellated appearance, whence the specific name *calligaster* given by Say to the western variety. In a specimen 3 feet long, the head was 11 lines, body 30 inches, and the tail about 5 inches; the abdominal plates 198 to 208, and the subcaudal scales 47; it grows to the length of 5 feet. It is perfectly harmless; from its frequenting houses and dairies, it has been called "house snake" and "milk snake." It feeds on frogs, toads, mice, insects, and small birds. It does not appear to be found below lat. 37° N.; westward it extends to the Mississippi; it prefers shady and rocky places; in the southern states it is replaced by *scotophis guttatus.* —The chicken snake of the south is *scotophis quadrivittatus* (Bd. and Gd.); the body is very long; above, a greenish clay color, with 4 longitudinal brown bands; yellowish beneath; scales on the back ridged, on the sides smooth; the head is quite distinct; the tail is ¼ the whole length. In a specimen 4½ feet long, the head was 1¼ inches, body 3½ feet, and tail 10 inches; 238 abdominal plates and 90 subcaudal scales; it is said to attain a length of 7 feet. It is found from North Carolina southward, and to the Mississippi; it destroys rats, young chickens, and small animals, but its bite is harmless to man; it is sometimes found on trees.

CHICKENS, MOTHER CAREY'S. See PETREL.

CHICKERING, JONAS, an American piano-forte manufacturer, born at New Ipswich, N.H., April 5, 1798, died in Boston, Dec. 8, 1853. He was put to the trade of a cabinet-maker, but early evinced great fondness for music, and successfully readjusted and tuned an old and disused piano which he found in the town. In 1818 he became a workman in Boston in a piano-forte manufactory, and 5 years later began the business for himself. He extended his resources by a partnership in 1830, but after the death of his partner in 1841 prosecuted the business alone with ample means. His establishment became one of the largest in the country, and he finished annually more than 1,500 instruments, and gave employment to about 500 operatives. His manufactory being burned one year before his death, at a loss of over $200,000, he constructed a new and magnificent building, furnished with the most complete arrangements, and forming 3 sides of a hollow square. The machinery of this establishment is propelled by a steam engine of 120 horse power. Mr. Chickering was esteemed not only for his enterprise and capacity in business, but also for his refinement and liberality.

CHICOPEE, or CHICKOPEE, a township of Hampden co., Mass., situated on the E. side of the Connecticut, at the mouth of the Chicopee river, 95 miles W. of Boston; pop. in 1855, 7,576, showing a decrease of 743 since 1850, and of 285 since its incorporation in 1848. It contains the villages of Chicopee or Cabotville and Chicopee Falls, which are connected by a branch railroad 2 miles in length, uniting with the Connecticut River railroad at Chicopee. The town was settled about 1640, and until within a few years formed the northern part of Springfield. Its growing population and importance suggested a separate incorporation as early as 1844, but no active measures were taken in the matter until it was determined to erect Springfield into a city in 1848, when, at the petition of the inhabitants of the northern village, who would be taxed to support the new city government without sharing its advantages, the legislature set off under the name of Chicopee the territory comprised in the villages of Chicopee Falls, Chicopee Street, Cabotville, and Willimansett. The township thus formed is one of the most important manufacturing places on the Connecticut river. It contains the 4 cotton mills of the Chicopee manufacturing company at Chicopee Falls, having about 700 looms, and a capital of $700,000; the works of the Massachusetts arms company, in the same village, having a capital of $70,000; 1 woollen mill, with $35,000 capital; 1 brass foundery, 1 manufactory of cotton, woollen, and other machinery, 1 of steam engines and boilers, 1 of ploughs, 1 of brushes, 1 of paper, 2 of railroad cars, coaches, &c., 1 of belting; the establishment of the Chicopee boot and shoe company, with $8,000 capital; the cotton mills of the Dwight manufacturing company, having $1,700,000 capital; and the extensive gun, sword, bronze, and machinery establishment of the

Ames manufacturing company, founded in 1834, with a capital of $250,000. The last 3 are at Chicopee village, which also contains a bank, a savings bank, and a newspaper office. There are in Chicopee 11 churches and 11 schoolhouses.

CHICORY, or SUCCORY (*cichorium intybus*), or the wild endive, a plant belonging to the same family as the dandelion, found growing wild in most parts of Europe, and in England in great profusion. It is also naturalized in this country, and is seen in the fields and roads along the fences in neighborhoods long settled. It blossoms in August and September, and may be easily recognized by its bright blue flowers. In its natural state the stem rises from 1 to 3 feet in height, though under cultivation it may be brought to 6 feet. The root is fleshy and milky. Chicory was formerly used to a considerable extent for medicinal purposes, and is still thought by some to be beneficial, if taken freely, in the early stages of jaundice and visceral obstructions, &c. It is employed almost exclusively of late as a substitute for coffee, or in the adulteration of this article. When prepared for this purpose, the roots are dried and reduced to powder, which resembles in color ground coffee, but it has neither the essential oil nor aromatic flavor of coffee. Its cheapness recommends it to the poor, and the beverage is by no means unpleasant. Large crops of chicory are now grown in England for the acknowledged purpose of adulterating coffee, and the sale of this mixed article is legalized, under the proviso that each package be labelled "Mixture of Coffee and Chicory." By chemical analysis, it has been found that chicory possesses few elements in common with coffee, and contains very little of the nutritive properties of which so high an opinion is sometimes entertained. In cases where it is used for a long time its effects are often deleterious, especially upon the nervous system. Notwithstanding the great cheapness and abundance of chicory, it does not escape adulteration. The substances used for this purpose are roasted wheat, rye, acorns, carrots, and a variety of similar articles, and even, it is said, exhausted tar, or "croats," and oak bark powder.

CHICOT, a county at the S. E. extremity of Ark., bordering on La., and bounded on the E. by the Mississippi river; pop. in 1854, 5,756, of whom 4,570 were slaves; area 820 sq. m. The surface is level and in some places subject to inundation. The soil in several parts is very fertile, and most of the land is occupied by plantations of cotton and maize. The productions in 1854 were 19,617 bales of cotton, 228,910 bushels of Indian corn, and 4,909 of oats. Capital, Columbia.

CHICOUTIMI, a county of Canada East, formed from Saguenay in 1853; pop. 7,099. Lake St. John's lies on its N. W. border, Commissioners' lake bounds it on the W., several smaller sheets of water are scattered over its surface, and the Saguenay intersects it, receiving in its course several small tributaries. The surface is rocky, rough, and broken, but near the streams are fertile and cultivated strips. A great deal of lumber is cut and sawed on the small streams emptying into the Saguenay. The Hudson's bay company have several stations in the county. Capital, Chicoutimi.

CHICSOI, a river of Guatemala, Central America. It rises in a mountain range about 40 m. N. of the city of Guatemala, flows N. W. for a distance of 150 miles, exclusive of windings, and enters the Mexican state of Chiapa, where it assumes the name of Usumasinta.

CHIETI (anc. *Teate Marrucinorum*), capital of the province of Abruzzo Citra, Naples, is a fortified city, built on a hill, in the midst of a pleasant country near the Pescara; pop. 14,000. It is badly laid out, but beautifully situated; some of its buildings are large and stately. It is the seat of an archbishopric, a high court of justiciary, a civil court, and of many wealthy families; it contains the remains of a large theatre, some ruined temples, a gateway, and a mosaic pavement. The ancient Teate was the capital of the tribe of the Marrucini, and was formerly one of the principal towns of this part of Italy. The order of Theatines or Chietines took its name from this place, the founder of the order, Paul IV., having been archbishop of Chieti. For some centuries it appears to have been a free city of Magna Græcia, after which it was held successively by the Romans, Goths, Lombards, Franks, and Northmen. It was taken by the French in 1802. The city contains 5 churches, comprising a cathedral, a military hospital, a college, and a religious seminary, several nunneries and monasteries, wool and silk manufactories, and carries on a trade in wine, grain, oil, fruit, mules, and in the other produce of the country.

CHIHUAHUA, one of the most northerly states of Mexico, lying between lat. 25° 53′ 36″ and 31° 47° N., and between long. 103° and 107° W. It is divided into 12 *partidos*, or departments, as follows: Aldama, Allende, Balleza, Batopilas, Chihuahua, Concepcion, Cusihuiriachic, Hidalgo, Jimenez, Paso, and Rosales; pop. 147,600. Its area, previous to the so-called "Gadsden treaty" of 1854, was 17,151¼ sq. leagues, according to the report of the engineers, made in the year 1834. By the Gadsden treaty about ⅐ of the area of the state was sold to the United States. (See ARIZONA.) It is bounded N. by Arizona, E. by Texas and Cohahuila, S. by Durango, and W. by Sinaloa and Sonora. On the E. it is separated from Texas by the Rio Grande, and on the W. from Sonora by the great mountain chain known as the Sierra Madre.—The eastern portion of the state consists of high table-lands, having an elevation of from 4,500 to 5,000 feet above the level of the sea. That near the Rio Grande is barren and sterile, the remainder is in broad plains with slight undulations, entirely destitute of forests, with but little shrubbery, and generally covered with a short grass, which renders it admirably adapted for grazing. Detached ridges and isolated mountains appear here and there on the plateau, seldom rising more than 1,500 feet above it, and in no place continuous. Approaching the western portion, the mountains become higher, with long spurs jutting out from the main ridge, separated by luxuriant and wooded valleys, until the great sierra is reached. This, at its highest point, attains an elevation of about 8,500 feet above the sea. The Sierra Madre is a continuation of the Rocky Mountain chain, which is abruptly broken between the parallels of 31° 30′ and 32° 40′ into short isolated ridges of less elevation. These ridges, as well as those further south, generally run from N. W. to S. E. Near the Guadalupe pass, lat. 31° 20′ N., the Sierra Madre again rises in lofty grandeur, and presents an unbroken ridge for more than 300 m. S., extending thence through the whole of Mexico and Central America. There is no available pass in this long distance; even narrow mule paths are only found in a few places, and these are attended with so much danger and difficulty that they are but little used. The mountains forming the Sierra Madre are well wooded with tall pines, oak, walnut, ash, cedar, &c. The pines grow on the higher mountains at an elevation of 7,000 to 8,000 feet above the level of the sea; the other kinds of trees grow below these, while in the intervening valleys and along the water courses are found the never-failing mesquite, the sycamore, cottonwood, and willow. The plains are generally without trees, although in some places are dwarfish mesquites, having a gnarled and diseased appearance, struggling for life in the parched and barren soil.—The southern portion of the state is well watered. In the north there are but few streams, some of which become entirely dry during the long summer. The water courses in the northern portion are the Casas Grandes, or San Miguel, Santa Maria, and Carmen rivers. The first discharges itself into Lake Guzman, the second into a lake of its name, and the last into Lago de Patos. The Casas Grandes has a course of 200 m., and runs through one of the broadest and richest alluvial valleys in the state. Corn and wheat are there cultivated to a great extent, and sent to other parts of the state, where they are converted into meal and flour. The valleys along the other streams are inconsiderable. The Santa Maria has an extent of nearly 200 m., and the Carmen of 125. On the eastern side is the Rio Grande, or Bravo del Norte, which, having its source in the Rocky Mountains of New Mexico, flows to the gulf of Mexico, and forms the larger portion of the eastern boundary of the state. This river receives large accessions of water in April and May from the melting of the snows in the mountains, when it sometimes overflows its banks. At other seasons of the year, or when the water has subsided, the river is fordable for the greater portion of its length wherever its banks will admit of approach. In width it varies from 200 to 600 feet, and, except when swollen, runs at the rate of from 1½ to 2 m. an hour. The largest tributary of the Rio Grande is the Conchos. This stream has its rise in the Sierra Madre, and after flowing 350 m. discharges itself near Presidio del Norte. In its course it receives the rivers Florido, Buenavista, San Pedro, Chihuahua, and Balleza, whose lengths vary from 60 to 120 m.; and these again receive smaller streams. The ramifications of the Conchos and its many tributaries afford an abundant supply of water to the central and southern portions of the state. The valleys adjacent are generally productive. In the mountains on the west several rivers have their rise; these are the San Miguel, Refugio, Moris, and Papigochic. After uniting with larger streams they flow through the states of Sinaloa and Sonora, and discharge their waters into the sea. The lakes are Guzman, Santa Maria, and Patos. The first 2 are brackish, particularly when low, the latter fresh. All are on the high plateau, and beside the water they receive from the streams which discharge themselves there, get large accessions, in consequence of the basins they fill, from the adjacent plains. There are several lesser lakes which are quite salt, except after rains. Mineral springs are also common in many parts of the state, but none are particularly noted for medicinal properties.—The climate of Chihuahua is temperate. For 8 months in the year there is a continual summer, and during the 4 remaining months the temperature is much like that of New York during the month of October. The atmosphere is so pure that the meat of animals dries in the sun without putrefying. In the more elevated parts there is more cold, and in the mountain district more rain, but on the table-land, which constitutes the greater portion of the state, the rainy season lasts only during the months of July and August. Then the streams, lakes, and ponds fill up, and remain full for the greater part of the year. In dry seasons the lesser streams become entirely dry. From the deficiency of rain, agriculturists depend entirely upon artificial irrigation. Indeed there can be no agriculture without it. In all the valleys bordering on streams the water is led through a canal, sometimes for a distance of 10 or 15 m., as on the Rio Grande at El Paso; thence by lesser ditches, called *acequias*, to all parts of the ground. Vineyards, corn and wheat fields, and vegetable gardens are alike irrigated. The bottom lands, which alone are susceptible of irrigation, are exceedingly fertile; and when to this is added the complete control of the water, the most abundant crops are the result, and, by good management, two crops in a season. The plateau furnishes a luxuriant pasturage; hence the raising of cattle has ever been one of the great industrial resources of the country. Horses and mules, cattle and sheep thrive well on the short grass of the plains; while the gramma grass of the hills is sought after as that of the plains dries up. Cattle are never penned, but are suffered to roam at large. Before the incursions of the Indians, and when the great haciendas and cattle ranchos were in a flourishing condition, it was not unusual for proprietors to have from 40,000 to 50,000 head on their estates. These great herds are now scattered, few being found to embrace more than $\frac{1}{10}$ that number. Chihuahua possesses a variety of fruits, among which are pears, apples, peaches, and quinces. Grapes are cultivated to a great extent, particularly in the valley of the Rio Grande, near El Paso, where vineyards of 20 acres are seen. A good quality of wine is made from these grapes, known as the Paso wine, which is transported to all parts of the state. It is made in a very rude manner, and might, with proper care, be much improved in quality. There are forests of nut trees, while figs, oranges, and citrons are successfully cultivated in the southern parts of the state. The agave grows in great perfection here, and is a most useful plant on account of the variety of purposes for which it is used. The beverages known as *pulque* and *mescal* are extracted from it, while its leaves, deprived of their pulp, are employed in the manufacture of coarse cloths, twine, and cordage. The more delicate leaves are also rolled up into balls, and these, on being pounded, form a lather which answers the purposes of soap. As an article of food, the larger bulbs or roots of the agave are extensively used by the Indians, who bake them in ashes. In cereals and vegetables there is a variety, including maize, wheat, barley, beans (*frijoles*), and peas. The mean result of a comparative table of the production of grain in the various districts of Chihuahua is shown to be 140 to 1 of corn, 32 for wheat, 70 for barley, 18 for peas, and 17 for beans. In the district of Jimenez corn has been known to yield, as an exception, 300 for 1. Among the vegetables are onions, lentils, red peppers (*chili colorado*), cabbages, tomatoes, beets, squashes, &c. Melons, too, of an excellent quality are abundant; but potatoes do not succeed well, although many attempts have been made to cultivate them. In the southern parts of the state cotton has been cultivated with success. On the whole, Chihuahua can never become an agricultural state, owing to the limited quantity of its arable land; yet there is quite sufficient to support a denser population than the present.—The most important branch of industry in the state is mining; its mineral productions yielding a larger return than its agricultural. Mines of native iron, lead, copper, mercury, arsenic, bismuth, cobalt, sulphur, and of salt, many of them extremely rich, abound on every side.. Coal, too, is said by Gen. Garcia Conde to exist 7 leagues west from Moris, and recent explorers have also testified to the same fact. Its rich silver mines, which have been celebrated for 200 years, are among the most productive in Mexico. Before the Indian devastations, which have been going on for 30 years, more than 80 mines were in full work; most of those in the western parts of the state have now been abandoned in consequence of the encroachments of the Apaches. The precious metals lie principally in the western part of the state, through the whole length of the Sierra Madre, a distance of 500 m., and from 80 to 90 m. in breadth. The eastern base of the mountains is said to contain the richest deposits. At the present time the operations of silver mining are confined to about the following important points: Moris, Batopilas, Morelos, Carmen, Urique, Guarochie, San José del Pilar, Jalmerejó, Rosario, Mulatos, Josehuiriachie, Javallo or Hidalgo, San Pedro, Batozegachie, Guazaparas, Jesus Maria, a mine near Correlitos, and Santa Eulalia. The mine of Santa Eulalia, 12 miles from the city of Chihuahua, is the most remarkable of these; it has yielded immense sums, and its wealth is considered inexhaustible. An evidence of the productiveness of this mine is shown in the fact that the great cathedral or parish church in the city of Chihuahua was erected from a fund raised by a tax of 1 real (12½ cents) on every mark of silver ($8 25) obtained from it. This fund was collected during a period of 72 years, commencing in the year 1717, and terminating in 1789, when the edifice was finished; its total cost having been $800,000. A church at the mining village of Santa Eulalia, costing $150,000, was built from the same fund, leaving a considerable amount still unexpended. These sums, raised by a tax at the rate mentioned, would require a gross income on the part of the mine of $52,800,000 to erect the former, and $9,900,000 to erect the latter edifice; or, together, $62,700,000—nearly $1,000,000 a year for 70 years. But the city of Chihuahua itself owes its foundation to this mine. At the period when the Santa Eulalia mine was in its most flourishing state, Chihuahua is said to have had a population of more than 50,000 inhabitants. These mines are believed to be as rich as ever; but from the accumulation of rubbish, the intrusion of water, and want of capital, they are now but little worked. Among the abandoned mines are those of Santa Barbara and Sierra Rica, both of great richness, and which during a long period yielded vast quantities of silver. In the mine of Morelos, which is still worked, a mass of native silver was found weighing 230 marks ($1,900). The silver ores occur generally as sulphurets, with iron or lead, sometimes as native silver and muriate of silver, and are found either entirely in porphyritic rocks, or in limestone, passing in greater depths into igneous rocks. They are worked either by amalgamation or by fire in common furnaces. The present low price of quicksilver has much increased the former mode of extracting the metal. But with either method the process is extremely rude and the silver not fully extracted. At some of the mines there has been an accumulation of cinders for more than a century; here parties are engaged in again working them over, and find that the silver thus obtained pays quite as well as their rude mining. This is all done on the surface by individual labor, and at a trifling expense. With the approved methods of smelting, the refuse matter and cinders at all the old mines might be worked over to profit. Gold has been found in many places. The greater portion at present is gathered by mining squatters, who make use of the rudest materials and methods of mining to effect their object. At the mines of Mulatos and Jesus Maria it has long been procured. That of Rosario has, even lately, yielded $10,000 a week. As a general thing, silver mining is much preferred to that for gold. The amount of the mineral productions of the state is subject to great variations, as it depends upon the richness of the mines. From Garcia Conde's *Ensayo estadistico* (folio, Chihuahua, 1842) we take the following statistics of the production of silver in this state: During the period of 24 years from 1738 to 1761 there was procured 3,428,278 marks of silver, or $28,283,293. This was the period of the most successful working of the Santa Eulalia mine. In the *partidos* of Chihuahua and Hidalgo, but 2 of the 12 into which the state is divided, the silver mines yielded in the 16 years between 1777 and 1793, 1,394,161 marks, or $11,501,828. Conde does not give the results since 1793, nor does he give, in his essay, the entire product of all the mines in the state. The following is given as the production of later years:

	Marks.	Dollars.		Marks.	Dollars.
1824	69,816	575,982	1831......	138,916	1,146,057
1826......	138,015	1,138,623	1832......	117,484	969,243
1827......	129,402	1,067,566	1833......	116,802	963,616
1828......	142,785	1,177,976	1834......	109,419	902,707
1830......	128,747	1,062,163			

The aggregate amount of the production of silver and gold in the year 1836 was $1,031,250. This does not include a considerable amount extracted from the mines on the borders of Sinaloa and Sonora and smuggled out of the state.—Among the wild animals of Chihuahua are the grisly, brown, and black bears, the jaguar, panther, cougar, ocelot, lynx, wolf, coyote or prairie wolf, fox, rabbit, antelope, the black-tailed and red deer, raccoon, skunk, marmot, squirrel, &c. The larger animals are chiefly found in the mountains. The beaver still exists in considerable numbers on the Rio Grande. The barren plains abound in moles, rats and mice, as well as in reptiles. Among the latter are lizards of an endless variety, horned frogs, tarantulas, centipedes, scorpions, and snakes. Many of these are enormous. Few birds are found, except in the mountains or in the woods along the margin of streams.—The Indian tribes of the state are the Comanches, the Apaches, and the Tarahumaras. The Comanches cross the Rio Grande in large numbers and devastate the haciendas of their stock; but few have a permanent residence within its borders. The Apaches carry on the same depredations from the N., often committing murders and carrying off cattle within a mile of the capital of the state. These hostile tribes have been the ruin of the state, and quite depopulated many portions of it. The Tarahumaras occupy the mountain region on the W., and are a peaceable tribe. They are often seen in the markets of Chihuahua selling their productions.—In the N. W. part of the state, 20 m. S. of Correlitos, on the banks of the Casas Grandes river, and near the village of the same name, are interesting ruins of the habitations of an ancient aboriginal people. (See CASAS GRANDES.) The people who selected this spot for their dwellings showed much sagacity, as it is near one of the richest valleys in the state. From the traces of the old irrigating canals yet distinctly seen, there is no doubt that the whole valley was brought into cultivation by these ancient people. These ruins are of the same character as those near the Pimos villages, on the Gila, and those further N., on the Salinas and San Francisco rivers. They were found deserted and in a state of ruin 250 years ago, when the Spaniards first entered the country.—An extensive commerce was formerly carried on between St. Louis and Chihuahua, *via* Santa Fé. The course of trade has now changed, and merchandise is sent from our commercial cities to San Antonio, Texas, and thence direct to Chihuahua. Long trains of wagons, laden with goods, now regularly pass this way, thereby reducing the land transportation more than ½ in distance. The only articles of export from Chihuahua are her silver and gold. The state is noted for its wine and brandy, and in 1854 produced 25,000 flasks (*fiascos*) of the former and 11,600 of the latter. During the present year (1858) a company has been formed for constructing railroads in this state, which has received most liberal grants from the government.

CHIHUAHUA, the capital of the state of Chihuahua, lat. 28° 38′ N., long. 106° 30′ W., was founded shortly before the year 1700 by some adventurers, for the purpose of working the rich silver mines in its vicinity. During the 18th century it was much more populous than at present. According to the census of 1833, it contained 10,602 inhabitants; and at the present time (1858) its population does not exceed 12,000. This cessation of prosperity is owing chiefly to the unsettled state of the country for the last 30 years. With the general expulsion of the Spaniards which took place after the revolution, this city, in common with every other in Mexico, lost its most active, enterprising, and intelligent citizens. Most of its wealth, too, was then taken away. After this the mines, which had yielded an amount of silver almost unparalleled, were imperfectly worked and many abandoned. The rural population, thus deprived of its chief dependence, the haciendas and ranchos which dotted the beautiful and luxuriant valley, met the same fate. In this way Chihuahua has greatly decreased in wealth, in commerce, and in general prosperity. The city stands in a broad plain, and partly in the valley of a creek of the same name. It is regularly laid out, with broad and clean streets, some of which are paved, and contain handsome and well-built houses, both of stone and adobe. Most of them have but one story; yet they are large and built in squares, with courts in the centre. Having thick walls and few windows, such dwellings are cooler and better adapted to the climate than those built in the northern mode. Twelve m. S. are 2 isolated mountains in which are the famous Santa Eulalia silver mines, alluded to in the previous article. From the tax on these mines the great cathedral, or, as it is called here, the "parish church" of Chihuahua was erected. This edifice, which faces the plaza, is built of hewn stone of a very light color, and has 2 well proportioned towers about 150 feet high and a dome. It is a fine specimen of the Spanish renaissance architecture, with a profusion of ornament, similar to that employed in Spain after the expulsion of the Moors; still its appearance is very imposing, and is equalled by few churches in the United States. The plaza is occupied by various public buildings; among which is the governor's palace, as it is called, but which embraces merely his reception room and the public offices. There are several other churches in the city, which, though small, are built with much taste. The church of San Felipe, a very large edifice, begun by the Jesuits, remains unfinished. Among the other public buildings is the *casa de moneda*, or mint. In it silver and gold are coined, but chiefly silver, and that by a most primitive process of manual power. Each Mexican state in which there are many mines has a mint, which is let to an individual or firm, and is not under the direction of the state or general government. For coining a mark of silver, without separating the gold, the charge is 2 reals (25c.); for coining and separating the gold, 5 reals (62½c.). This coin is said to yield a profit of 5 per cent. upon its current value at the United States mint. It is put up in sacks of raw hide containing $1,000 and $2,000 each. These shrink in drying, and press the coin so closely as to prevent friction. The value of gold coined in 1855 was $144,208, and of silver, $475,500. Another public place of note is an arena for bull fights. In an open square in another part of the city is a rude monument, of an obelisk form, to the memory of the heroes of the revolution, Iturbide, Hidalgo, Allende, and Jimenez, but without any inscription. Another costly public work is the aqueduct, which conveys to the city an abundance of pure water. It was constructed toward the close of the last century, and has an extent of 3¼ m. It is well built of stone, and, with its long ranges of graceful arches winding over the uneven ground and spanning the valleys in its course to the city, presents a highly picturesque appearance. In addition to this, a small stream runs by the northern part of the city, the surplus water from which, with that from the aqueduct, is used to irrigate the gardens in and around the city. The elevation of Chihuahua above the level of the sea is 4,640 feet.

CHILBLAIN, an atonic inflammation or chronic engorgement of the skin and subcutaneous or cellular tissue, caused by sudden alternations of temperature, generally by exposing the hands and feet when benumbed with cold to too great heat. As they usually appear, the skin is reddened and somewhat swelled, painful on pressure, with considerable tingling and itching; the disease may be accompanied by vesicles, surrounded by a livid skin; and, if severe, may proceed to ulceration and superficial gangrene. They most frequently are seen on the toes, heel, and ball of the foot, but the hands and face may be affected; women, children, and men of weak constitutions, are most subject to them; soldiers in winter campaigns are much troubled by them. The treatment consists in stimulating lotions and ointments, cold applications, and gentle frictions; there is hardly any stimulant which has not been used with advantge in their treatment; probably the best are a liniment containing tincture of cantharides, and the tincture of iodine applied with a brush. If ulcers form, they must be treated like any other indolent ulcers, by stimulating applications, and the nitrate of silver. Persons liable to them may generally escape by bathing the exposed parts in cold, alcoholic, or stimulating lotions, and by avoiding the fire when their feet are cold and damp.

CHILD, Sir Josiah, an English merchant, born in London in 1630, died there in 1699. The work by which he is known is entitled "Brief Observations concerning Trade and the Interest of Money, by J. C.," 4to. London, 1668. An enlarged edition was published in 1690, under the name of "A New Discourse on Trade." The work has been several times reprinted. It was written in defence of the reduction, by legal enactment, of the rate of interest on money from 8 to 6 per cent., and recommends a further diminution to 4 per cent. He was for some time chairman of the East India company, and wrote several papers, without signature, in defence of the traffic with the East, arguing, in opposition to those who complained of the drain of coin, that the India trade percolated through other countries with which Britain traded, and thus returned indirectly a surplus in cash. In his essay on trade he advocated the compulsory emigration of paupers to the colonies, and suggested the appointment of corporate officers called "fathers of the poor" to superintend those who were left. He became very wealthy, and his children, by 3 marriages, allied themselves with the highest nobility. Charles II. made him a baronet. His son became Earl Tylney, but the title is now extinct.

CHILD, Lydia Maria, an American authoress, born at Medford, Mass., Feb. 11, 1802. Her father, David Francis, was a baker, and was well known in New England and elsewhere as a manufacturer of a celebrated sort of biscuit called "Medford crackers." In 1824 Miss Francis published her first book, "Hobomok, an Indian

Story," which attracted a good deal of attention. Later in life one of her subsequent works is dedicated to her brother, the Rev. Dr. Convers Francis, of Harvard university, "to whose early influence," she says, "I owe my early love of literature." It is to the writing of "Hobomok," in which she received his encouragement, that she here probably alludes. The Indian story was followed, the next year, by "The Rebels, a Tale of the Revolution." The scene was laid in Massachusetts, and some of the characters were the historical men of that period. The book has long been out of print, but for several years it held its place as a standard novel, the times and the events with which it dealt, the spirit in which they were treated, giving it a strong hold upon the popular esteem. A speech which, in accordance with the example of sober historians, who never write fiction, she put into the mouth of James Otis, for many years fired the patriotism of the boys of that day, and was believed by them, and many who listened to their ardent declamation, to have been the words which actually fell from the lips of that patriot. A sermon of Whitefield's was also given in this volume, and that as well as the speech was submitted to the ordeal of the New England school books, where it passed for a genuine sermon of the great preacher. In 1826 she commenced a monthly magazine, under the title of the "Juvenile Miscellany," which for 8 years was under her management. She published a cookery book, under the title of "The Frugal Housewife," which later and more ambitious publications upon the same subject have not displaced. In Oct. 1828, she was married to Mr. David Lee Child of Massachusetts. In 1831, the "Girls' Own Book," and the "Mothers' Book," testified to the strong interest she felt in practical education. About this time the modern anti-slavery movement, which was initiated by William Lloyd Garrison, was commenced in Boston. It was a very unpopular cause, but Mrs. Child identified herself with it at the beginning, and has never faltered in what she conceived to be her duty in this respect. One of the first distinctive anti-slavery books was her "Appeal in behalf of that class of Americans called Africans," in which she advocated the immediate emancipation of the blacks, as the right of the slave and the duty of the master, and as in accordance with reason, expediency, and an enlightened recognition of religious truth. This is her largest and most comprehensive work upon the subject of slavery; but it was followed up in subsequent years by various smaller publications of a similar character. The condition and the character of woman in various ages of the world were also considered by her in the biographies of various individuals of different ages, and in a general discussion of the subject in a work of 2 volumes. In 1836 she published "Philothea," a Grecian romance, of the time of Pericles and Aspasia. In 1841 Mrs. Child removed to New York to take charge as editor of the "National Anti-Slavery Standard," a newspaper belonging to the American anti-slavery society, and devoted to the dissemination of its views. She gave at once a name and character to the new paper, of which she remained editor, assisted by Mr. Child, for 2 years. In its columns she commenced a series of "Letters from New York," which, with others written subsequent to her withdrawal from the editorship of the "Standard," were collected into 2 volumes in 1843–'4. Since that time she has published several volumes of stories for children, a literary speciality in which she has been eminently successful. In 1853 she wrote and published the "Life of Isaac T. Hopper," a Friend, of whose family she was an inmate during her residence in New York. But her most important work of later years is the "Progress of Religious Ideas," in 3 volumes (New York, 1855). To this she has devoted many years of a thoughtful and laborious retirement, and gives in it the results of long and earnest study, and of firm and conscientious convictions. Mrs. Child is still living in Massachusetts, and is in the full vigor of a matured intellect.

CHILDEBERT, a Merovingian king of the Franks, the 3d son of Clovis and the 2d of Clotilda, died in 558. On the death of his father in 511, he became king of Paris as his share of the patrimony, participated in the conquest of Burgundy, and subsequently crossed the Pyrénées and took Pamplona. He was the founder of the celebrated church of St. Germain des Prés, in Paris. He died childless, and his kingdom was united to that of his brother Clotaire I., king of Soissons. Two other Merovingian princes of the same name are to be found among the *rois fainéants*.

CHILDREN, John George, an English electrician, born at Ferox Hall, Tunbridge, May 18, 1777, died Jan. 1, 1852, was educated at Cambridge for the church, but his wife dying, he travelled for some time in the south of Europe and the United States, and then devoted himself wholly to scientific pursuits. In 1808 he published in the "Philosophical Transactions" an account of a series of experiments made with a voltaic battery of unusual dimensions, namely, of 20 pairs of plates, each 4 feet by 2, the result being confirmatory of Davy's view, that intensity increases with the number of plates, and the quantity of electricity with the extent of surface. In 1815 he continued the subject in the "Philosophical Transactions," relating among other interesting results the conversion of iron into steel by union with diamond. Subsequently he discovered a method of extracting silver from its ore, without amalgamation, and sold the right to some South American mining companies. Beside the papers above mentioned, he published translations of Berzelius "On the Blowpipe," and Thénard "On Chemical Analyses;" also assisted to establish and edit the "Zoological Journal." He was for some years secretary of the royal society, and one of the librarians of the natural history department in

British museum, but vacated both offices years previous to his decease.

[illegible] ILI, or CHILE, a republic of South Amer[illegible] g W. of the Andes, and between the [illegible] of lat. 23° and 55° 59′ S., having a [illegible] about 2,270 m., and a breadth vary[illegible] m. to 20 m. Its area is variously [illegible] by different geographers at 146,300 [illegible] Gilliss), 348,000 (Abbé de Molina), [illegible] ain), and 249,000 by German [illegible] no careful geodetic survey [illegible] e of the country, and, owing to its [illegible] face and the uncertainty of its bound[illegible], none will probably be made [illegible] these estimates are only conjectures. [illegible] unded N. by lat. 23° S., which separates Bolivia, E. by the Andes, which form [illegible] line between it and the states of [illegible] confederation, S. and W. by the [illegible] It claims to include in its terri[illegible] a W. of the Andes, as the Ar[illegible] on does that portion lying [illegible] se mountains.—The surface of Chili is diversified. Beside the Andes, which [illegible] border, and which, unless we except [illegible] a higher mean elevation and [illegible] more lofty peaks here than in any [illegible] of th[illegible] course, there are two other [illegible] ation indeed, but occasionally [illegible] the level of perpetual snow, [illegible] portions of the narrow strip [illegible] nes b[illegible] ween the Andes and the [illegible] near the 33d parallel. The [illegible] traverses the central por[illegible] l is known as the central [illegible] by the passage of rivers terminating on the Pacific, opposite the [illegible] of the island of Chiloe. The other, known as *la Cordillera de la Costa*, or the coast range, separating from the central near its origin, follows more nearly the line of the coast, though throwing off spurs occasionally eastward; it is of lower elevation than the central range, and is in some parts arable. Beside these mountain chains, there are multitudes of isolated hills, rising from the valleys, and forming bold promontories on margins of river, lake, and ocean. The principal valley of the country is that lying between the central chain and the Andes; but there are innumerable others, lying between the coast and the central ranges, or guarded by the outlying spurs of the Andes or the central chain. Of the mountains of Chili, a large proportion are now, or have been at some time, volcanic. How many possess this character cannot now be ascertained; but the streams of lava which score the sides of many which are now quiet, and the not infrequent eruption of the fiery flood, as well as the occasional emissions of smoke and flame from those still active, indicate that the volcanic character belongs to the greater part. It is a question undecided by geographers, which are the highest peaks of the new world. Chimborazo, Ancohuma, Illimani, Aconcagua, Tupungato, Parinacota, and Sahama have each, in turn, enjoyed this distinction, and lately Sirima and Cerro del Mercedario are among the candidates for this honor. Of these, Chimborazo belongs to Ecuador; Parinacota, Sahama, and Sirima to Peru; Ancohuma and Illimani to Bolivia; and Aconcagua, Tupungato, and Cerro del Mercedario to Chili. The following table exhibits the height and locality of the loftier peaks of the Chilian Andes, according to several eminent authorities, designating those known to be volcanoes:

PRINCIPAL PEAKS OF THE CHILIAN ANDES.

Name of Peak.	Lat. S.	Long. W.	Height according to Pentland.	Height according to Pissis, 1854.	Pissis, 1855.	Gilliss.	Fitzroy.	Kellett.	Line of perpetual snow.
Aconcagua	32° 39′ 42″	69° 57′	23,906	22,301	22,423	22,301	23,199	23,334	....
Tupungato	33° 16′ 50″	69° 51′	....	22,016	21,413	22,450	....	....	11,480
Cerro del Mercedario	32° 00′ 05″	69° 53′	....	....	22,305	....	....	....	....
Cerro de la Ramada	32° 05′ 08″	69° 52′	....	....	20,824	....	....	....	....
Joncal	33° 05′	69° 48′	....	20,368	19,562	20,368	....	....	....
Cerro del Plomo	33° 13′	70° 07′	....	....	17,825	17,825	....	....	....
Maypu	33° 44′ 2[illegible]	69° 43′	....	....	17,664	17,664	....	....	....
Cruz de Piedra	34° 12′	70° 03′	....	....	....	17,126	....	....	....
San José	33° 42′	69° 51′	....	....	....	18,150	....	....	....
San Francisco	33° 12′	70° 12′	....	....	....	16,998	....	....	....
Cordillera de la Laguna	30° 30′	69° 23′	....	....	....	15,575	....	....	....
Descabezado	35° 00′	71° 03′	....	....	....	13,100	....	....	8,455
Volcano of Villarica†	39° 14′	71° 57′	....	....	....	16,000?	....	....	....
Volcano of Llayma	38° 50′	72° 08′	....	....	....	unknown	....	....	....
Volcano of Antuco	37° 07′	71° 02′	....	....	....	9,245	....	....	6,594
Volcano of Osomo	41° 09′	72° 36′	....	....	....	7,550	....	....	4,800
Volcano Minchinmedon	42° 48′	72° 31′	....	....	....	8,000	....	....	....
Yanteles Volcano	43° 29′	72° 48′	....	....	....	8,030	....	....	....
El Corcovado Volcano	43° 12′	72° 50′	....	....	....	7,510	....	....	....
Volcano de Llullaillaco	24° 15′	71° 20′	....	....	about	21,000‡	....	....	....

† Active volcano, 1852. ‡ According to Philippi, survey of 1854.

In the northern portion, the coast and central Cordilleras spread out into the elevated plateau known as the desert of Atacama, which rises rapidly from the coast to a height varying from 4,000 to 10,000 feet, and from the comparatively level surface of which shoot up mountain peaks of great elevation, and often volcanic. By a recent convention with Bolivia, Chili relinquishes all claim to that part of the desert lying N. of lat. 23° S., and in this portion of her territory the only very lofty peak known is the volcano of Llullaillaco, which Dr. Philippi states at not far from 21,000 feet high. Few, if any, of the active volcanoes of the western continent exceed this height. Geographers enumerate 11 passes over the Andes, from Chili into the Argentine confederation, one or two of which, however, rest on tradition; 2 others, though practicable, and indeed comparatively easy, are not used on account of the ferocity of the Indian tribes in the vicinity; others still are objectionable for their great length or their liability to being obstructed by snow. Of the whole number only 2 are now passable by wagons. The following table gives these passes, with their locality and elevation:

PASSES OF THE CHILIAN ANDES.

Name of Pass.	S. lat.	Long. W. f'm G'wich.	H't above the sea.	Remarks.
Portezuelo Come Caballo..	27° 36'	69° 20'	14,522	Visited by Prof. Domeyko.
Portezuelo Doña Ana.....	29° 51'	69° 12'	14,849	" " "
Laguna pass..............	near Doña Ana.		14,920	This and the 2 preceding can only be used in the summer months.
Cumbre pass.............	32° 49'	70° 07'	12,488 12,656	There are 2 roads over the culminating point.
Portello, E. pass..........	33° 35'	69° 46'	14,315	These can only be passed in safety for 2 months in summer.
Portello de los Piuquenes.	" "	" "	13,362	
Pass of Antuco...........	37° 07'	71° 02'	6,500	This, but for the Indians, would be the easiest pass over the Andes. Wagons can cross it.
Pass of Planchon.........	....	....	6,600	This is near Antuco, and would be very easy but for the Indian tribes.
Pass of Los Patos.........	....	....	....	A very long and circuitous pass in Aconcagua, used only by drovers of cattle.
Pass of La Dehesa........	near Tupungato			Mentioned by Miera, but not now travelled or known. It must have been quite direct, but over very lofty mountains.
New pass.................	near L. Todos los Santos....			Recently discovered, and said to be capable of being traversed by wagons.

—The lakes of Chili are numerous, but few of them are very large. With the exception of a few salt ponds or coves near the coast, they are bodies of fresh water, accumulated in the valleys, high up in the central range or the Andes. The largest is Llanquihue, at the foot of the Andes, in the province of Valdivia; it is nearly triangular, 30 m. long, and 22 in its greatest breadth. Near it, and lying in the same plain, are Todos los Santos, or Esmeralda, 18 m. long and 6 wide, and Llanquihue, or Rupanco, 24 m. long and 4 broad. Puychue, a short distance N. of this, is a trifle larger; and some 10 or 12 m. further N. is Ranco, a very irregular shaped lake, 32 m. long and 18 broad. Immediately E. of Valdivia are 5 small lakes, which form the head waters of the Valdivia river; near lat. 39° is Villa Rica or Llauquen, which covers more than 100 sq. m. In the province of Concepcion there are 2 lakes, Guilletue, with a surface of about 50 sq. m., lying high up in the Andes, and La Laja, celebrated for its picturesque scenery, and for the beautiful fall, a miniature Niagara, in its outlet a short distance below. North of these there are no lakes deserving the name, but small collections of water, the product of the melting snows drained into extinct craters, covering a surface of from 3 to 20 sq. m., diversify the rugged scenery of the rough granite masses of the Andes.—The rivers of Chili are all of inconsiderable length, rising in the Andes, and finding their way by numerous waterfalls and rapids to the Pacific. When swollen by the melting of the mountain snows, they discharge large amounts of water, and no inconsiderable quantity of alluvium, gravel, and even the debris of rocks, into the Pacific, and almost all of them have, in consequence, considerable bars at their mouths. The following are the principal rivers: The Biobio rises in an extinct volcano in the extreme E. of the Andes, lat. 38° 15', and takes a general N. W. direction, receiving 3 considerable affluents, the Laja, Duqueco, and Bergaru, and after a course of nearly 220 m. discharges its waters into the Pacific, in lat. 36° 50'. Like the other rivers of the country, it has a sand bar at its mouth, which prevents vessels of any considerable draught of water from ascending it. Inside the bar there is water enough for large shipping. A canal has been projected from the bay of Talcahuano into the river above the bar to obviate this difficulty. The river is navigable as far as Nacimiento, nearly 100 m. The Maule rises in the Andes, in lat. 35° 10' S., and has a nearly due W. course of about 150 m.; it is navigable for small craft about 70 m. The Valdivia rises in Lake Guanegue, in lat. 39° 45', and has a W. S. W. course; its length is about 100 m., and it is navigable for 50 m. The Imperial rises in the Andes by several sources, in the vicinity of the parallel of 38° 30'; its course is S. W. and W.; its length about 150 m., of which about 30 are navigable. The Tolten rises in Lake Villa Rica, lat. 39° 5' S.; its course is nearly due W.; its length is about 60 miles; it is navigable, but not navigated on account of the ferocious Indians on its banks. The Bueno rises by 2 principal sources, in 2 lakes of the Andes, lat. 40° 50' and 40° 40'; it has a course of about 110 m., of which 20 are navigable. The other considerable streams, none of which, however, are navigable, are the Maypu, the Rapel, the Itata, the Aconcagua, the Mataquito, the Limari, the Coquimbo, the Huasco, and the Copiapo. The last, though at times a considerable stream, is often dry in summer.—There are but few good harbors on the coast of Chili, though in the multitude of its small bays and indentations, there are several roadsteads where, in fair weather, vessels may lie at anchor in safety. The best harbor is that of Talcahuano, in the bay of the same name, which is well protected, and with ample depth of water and room sufficient for the accommodation of the largest fleet. Coquimbo is the next harbor in point of safety; it is well sheltered on the W., S., and E., and as there are no tempestuous winds from the N. it is sufficiently secure. Close by it is a small land-locked harbor, Port Herradura, well adapted for repairing ships. The harbor of Valparaiso is the most important on the Chilian coast, in the extent of its commerce, though, from its openness to northerly winds and the peculiar form of the bay, accidents to shipping are not uncommon. Caldera, in the bay of the same name, from which the largest exports from the silver and copper mines are shipped; Constitucion, within the mouth of the river Maule, an indifferent harbor, but opening into a fertile region; Valdivia, an excellent harbor for small vessels; San Miguel, a convenient anchorage, lat. 50° 17'; and San Carlos, on the island of Chiloe, lat. 41° 51', are the other principal harbors on the coast.—The islands appertaining to Chili are numerous. The most important, and indeed the only ones of much intrinsic value to the republic, are those of Chiloe and its archipelago. Possessed of a healthy though moist climate, a soil of extraordinary fertility, and with no elevation above 2,600 feet, a temperature in which ice does not form, and frost and snow are exceedingly rare, Chiloe may well be called the garden of the Pacific. It yields fine crops of wheat, barley, and potatoes, every year, and the domestic animals propagate rapidly, and contribute largely to the commerce of the island. The potato is indigenous here, and, by cultivation, has reached a high degree of excellence. The inhabitants are amiable and hospitable, but, owing in part probably to the beneficence of nature in providing them a support with but little labor, they are inclined to indolence. The principal islands of the archipelago are San Pedro, Lilchuapu, Caylin, Tanqui, Lemuy, Quehuy, &c., &c. There are in all more than 100 of these islands, of which 20 are settled, and have good harbors. These all abound in seals, otters, and shell-fish, and are well supplied with wood and water. Southward of these are the Guaytecas group and Huafo, similar in their general character. On the coast above Chiloe are several smaller islands, the principal of which are Mocha, lat. 38° 23', Santa Maria, lat. 37° 3', and Quiriquina, in the mouth of Concepcion bay, all of which have within the past 100 years met with extraordinary physical changes, from the earthquakes so common on the coast. The most renowned of all the Chilian islands is the group rendered immortal in connection with De Foe's "Robinson Crusoe," Juan Fernandez. Aside from the fictitious interest thus bestowed upon them, these inconsiderable islands (for there are 2 principal and several smaller ones) have played a conspicuous part in the history of the South Pacific. First colonized by Juan Fernandez, in 1563, they were abandoned in a short time by the colonists, who left their goats and fruit trees. Subsequently, they became a favorite resort for pirates and buccaneers, and afforded to Lord Anson, for 3 months, a refuge where his crew might recover from the scurvy, and his vessels be refitted. They were visited by Ulloa in 1741, and in 1751 an attempt was again made for their colonization, by the Spanish government; an attempt twice repeated during the present century, by the Chilian republic. They now form a prosperous community, and export to the mainland fruits, meats, and fish, in considerable quantities.—The climate of Chili is one of the finest in the world. Being in the south temperate zone, its summer answers to our winter, December, January, and February being the hottest months. During 3 months little or no rain falls, and the thermometer sometimes rises to 90° or 95° F.; but the sea breeze at night cools the earth, and renders the temperature refreshing. The mean temperature of the winter months at Valparaiso is 54°, at La Serena 54.8°, at Santiago 49°, at Valdivia 46.8°. The highest temperature known at Santiago is 90°, the lowest 47.5°. At Valparaiso, the highest mean point in summer in 3 years' observation was 78°, the lowest 62°, and the annual mean 70.8°. At Coquimbo, the mean summer temperature was 63.6°, and the entire range only 16.8°. At Concepcion, the mean summer temperature at 3 P. M. was 73.5°, the mean for the year about 56°. In Valdivia, the mean summer temperature is 60°, that of the year 55°. At Santiago, the average number of hours during which rain fell in the year, during 26 years' observation, was 215¼, or about 9 days. Further south, the quantity of rain is somewhat greater; the island of Chiloe has a very moist climate. Toward the north, on the contrary, the rain diminishes in quantity, and on the desert of Atacama seldom or never falls. As a result of this equable and uniform climate, trees, fruits, and flowers of both tropical and temperate regions flourish well. In some parts of the country, the deciduous trees seem to forget to disrobe themselves. "The native palm and pine of Araucania," says Lieut. Gilliss, "the cherimoya of tropical America and the medlar of Japan, the magnolia of Florida and the olive of Asia, may all be found within the compass of a garden, not less luxuriant in their proportions and ever verdant foliage than under the climes of their origin." The atmosphere is remarkably clear, especially at night. Indeed, so great is its superiority in this respect over that of the Cape of Good Hope, which was selected by English astronomers for their observations, that it is estimated that a 6½ inch achromatic at Santiago is fully equal to a 12½ inch one at the Cape. The crescent of Venus was more than once seen with the naked eye by

Lieuts. Gilliss and Macrae. There are 2 drawbacks to this delightful climate, the violent winds and hurricanes which occur at some seasons, and the earthquakes. During the summer months, northerly winds, known as *temporales*, occasionally blow in violent gusts, sometimes for 2 or 3 days, and are then followed by several weeks of pleasant weather. There is usually a fresh breeze from the S. W. between the hours of 10 and 3 in the day during the summer, and the force of this breeze on the mountains is terrific. Of the earthquakes, we will speak more at length presently. The climate, though so delightful, seems to predispose the inhabitants to apathy and indolence, the *dolce far niente* of Italy. The Chilians are not a long-lived people; pulmonary diseases, affections of the heart and liver, and epidemic dysentery prove fatal to great numbers, and reduce the average duration of human life there to a lower point than in more variable climates. How far these diseases may be dependent on other causes than climate, it may be difficult to ascertain.—Chili may with propriety be called the land of earthquakes. Whether these phenomena are due to the great number of active volcanoes which are found along its eastern border, or to other causes not yet understood, it is certain that the Pacific coast of the Andes, and that portion of it in particular lying between 23° and 45° S. latitude, is visited by more earthquakes than any other known region of the earth. The inhabitants have 2 words by which they designate the phenomena: *temblores*, slight and partial agitations of the surface, which rarely or never do any serious damage, and *terremotos*, or violent upheavings and oscillations, which destroy buildings, peril life, and sometimes involve whole cities in ruin. The *temblores* are so frequent as to pass unnoticed, rarely even furnishing material for a newspaper paragraph. The record of 25 months' observation at La Serena, in the province of Coquimbo, between 1849 and 1852, shows 156 shocks in that period, though the great earthquake of April, 1851, and the repeated shocks which followed, were not included. Of these, not more than 2 or 3 could be put down as *terremotos*. At Santiago, in 32 months, there were 130, of which 4 were very severe. The number increases, evidently, in a rapid ratio, as the observer proceeds northward, though in general those of central Chili are most severe. Of the great earthquakes, 16 of peculiar severity are recorded, in nearly all of which there was considerable destruction of life and property, viz.: that of 1570, which destroyed Concepcion, the most flourishing city of the infant colony, and in which 2,000 persons perished; that of 1647, which destroyed the city of Santiago, and in which 1,000 persons and 60,000 head of cattle perished; that of 1657, which again destroyed Concepcion and brought the sea over it, but was attended with but small loss of life; that of 1688, which destroyed a part of Santiago; that of 1722, which injured much property, but did not destroy life; the great earthquake of 1730, which, either by the shock itself, or by the huge sea waves which it occasioned, destroyed Valparaiso, Serena, Concepcion, Coquimbo, and indeed every village on the coast between Concepcion and Coquimbo, and overthrew the churches, and in Santiago over 100 persons lost their lives; that of 1751, by which the city of Concepcion was a third time destroyed, and Chillan and Santiago were nearly prostrated; Juan Fernandez was also overwhelmed with the waves, and 40 of its colonists, including the governor and his wife, were drowned; that of 1783, which caused considerable damage at Santiago; that of 1819, which destroyed Copiapo; that of 1822, which overthrew the greater part of Valparaiso, Quillota, Mellipila, and Casablanca, and did great injury to Santiago and the adjacent towns; nearly 200 lost their lives, and many others were wounded; that of 1829, by which comparatively little mischief was done; that of 1835, by which Concepcion was a fourth time destroyed, and Talcahuano, Los Angeles, Yumbel, Cauquenes, and Constitucion were levelled, and about 200 persons were killed; that of 1837, which destroyed the city of Valdivia; that of Nov. 1849, less marked by ruin; that of Dec. 1850, which produced great damage at Santiago and its vicinity; and that of April 2, 1851, which injured a great number of persons and churches at Santiago, Valparaiso, and many of the intervening villages.—The topographical structure of Chili implies the continuation of similar geological formations in a N. and S. direction, following the range of its mountain chains. Those of the Andes have already been noticed in pp. 544 and 545 of vol. i. of this work. The belt of country between the Andes and the coast, ranging from 80 to 100 m. in width, is traversed, S. of lat. 31°, by numerous longitudinal ridges, called the Cordilleras of the coast, which are granitic. Further N. these spurs are more irregular in their direction, and are covered in great part with barren sands, showing no trace of vegetation. This N. portion is of importance for its valuable mines of ores, while a strip along the S. coast, from Concepcion to the island of Chiloe, contains the principal mines of bituminous coal worked in South America. The country between the Andes and the coast is particularly interesting to geologists for the evidences it presents of several successive elevations, which it has experienced within modern times. Some of these are historical, as that of 1822, when the coast at Valparaiso, and for many leagues N. and S. of it, was uplifted about 6 feet. The bed of shells and sea pebbles which marked its former beach is now that distance above the reach of the highest tides; and a succession of similar collections of shells of species belonging to the coast, accompanying terraces found further inland, and at higher levels, indicate as many as 5 uplifts of this character, but of much greater height, the difference of level between two terraces being found 120 feet, and between the next two 182 feet. Around the bay of Coquimbo these terraces are most distinctly marked in the hills; and as they extend back into the country they spread out into plains, upon which the towns are built. Near Valparaiso comminuted sea shells of living species are found at elevations of over 550 feet; and some, it is stated, have been met with even 1,300 feet above the sea level.—The mines of the Cordilleras of the coast have proved productive in the province of Santiago of silver and gold. The latter metal is worked in veins associated with the sulphurets of lead, zinc, copper, and iron, 4 leagues from Rancagua, and is also collected in the deposits of the streams. The inaccessibility of the mining districts, and the presence of hostile Indians, check the working of the gold mines; so that the annual production of the whole country is not rated at more than $500,000. The silver mines, though once extensively worked, are now for the most part abandoned for the richer mines of Copiapo. This province likewise affords some cobalt and nickel, veins of the arsenical ores having been worked for several years near the mountain called Caro del Volcan, and their products shipped to England. Copper mines are found along the course of the granitic and metamorphic rocks of the coast range and W. spurs of the Andes from Santiago to the N. extremity of the country. This belt indeed abounds in metallic riches throughout its extent, even to Bolivia and Peru; but though lead, iron, bismuth, antimony, arsenic, zinc, and manganese are found, they are esteemed of no value, and the only mines worked are of the other metals named, and also to some extent of cinnabar. The importance of this ore is, however, greatly reduced by the cheap production of mercury in California. The mining region of Copiapo is in the province of Atacama in the N. of Chili. Within 25 leagues of Copiapo there are said to be 19 silver mining districts, containing 235 silver mines, worked in 1851 by 2,761 miners; and also 6 gold and 14 copper mines. The last accounts from Copiapo (Oct. 1858) announce increased activity in the mining districts. In July, 116 petitions for working silver and copper mines were granted. The two most important districts are Tres Puntas and Chañarcillo, the latter 50 m. from Copiapo. A railroad connects Copiapo with the port of Caldera, 54 m. distant, and this is to be extended to Chañarcillo, with a branch to Tres Puntas. Means will thus be afforded of shipping the immense supplies of silver ores from the mines, where much of them, though rich, had been almost worthless from the want of fuel and water in the interior to effect their reduction. In 1851 there were exported from Caldera over 2,300,000 lbs. of silver ores, beside 3,030,874 ounces of the metal in bars and ingots; and in 1852 the value of the copper ores and ingots shipped from the same port was nearly equal to $4,000,000. In July, 1858, 14,387 marks of silver were exported from this port, paying duties to the amount of $1,848 77½. In 1856 the production of all the copper mines of the republic amounted in value to $8,483,154, and in 1857 the exports were of the value of $10,760,589. The exportation of copper ore from Huasco amounted in July, 1858, to 256,300 lbs. A discovery of rich copper mines was made in the same month, toward the north of Tres Puntas, at Chañaral Alto, and many persons have set out in search of the metal. The coal beds of the province of Concepcion were known as early as the year 1825. In 1834 they were examined by Mr. Wheelwright, superintendent of the South Pacific steam navigation company. In 1841 the formation was traced between Talcahuano and Valparaiso, and mines were soon after opened at the former locality. The coal has also been found in abundance near the mouth of the Laraquita, and the beds are visible in the cliffs from vessels sailing along the coast. The most productive mines are in the districts of Coronel and Lota, the latter 30 m. S. of the Biobio, in the province of Concepcion. About 1,000 miners are employed, and the average annual produce is estimated at about 174,000 tons, worth about $5 per ton. The coal beds are contained in strata supposed to be of the tertiary formation; and though the coal of this age is never so good as that of the true coal measures, that of Chili is found to answer for steam and domestic purposes; it is considered unsuitable for smelting copper ores. Prof. W. R. Johnson examined some specimens said to be from the province of Arauco, which he describes in vol. i. of the "Proceedings" of the academy of natural sciences of Philadelphia, as of dull or pitchy black color, and nearly related in external appearance to many of the richest bituminous coals of America and Europe. By analysis they afforded 67.62 per cent. of carbon, showing a decided superiority over the ordinary brown coal of the tertiary. Reports of examinations of other coals of the region represent, however, a percentage of carbon not exceeding 40, and the presence of much iron pyrites. Coal is imported from England in large quantities for the use of steamers, and for smelting ores. Other mineral products found in Chili, as gypsum, limestone, saltpetre, alum, rock salt, and precious stones related to the agates, are turned to little if any account. The most noted mineral springs are those of Apoquindo, Colina, Cauquenes, Panimavila, Mondaca, Cato, Soco, and Doña Ana; the principal constituents of which are, chloride of calcium, chloride of sodium, chloride of magnesium, and sulphates of soda and lime, with occasional traces of iron and alumina. About 75 m. E. S. E. of Chillan are found hot sulphur springs, almost up to the line of perpetual snow on the Nevada de Chillan. They are much frequented, and are reputed to possess extraordinary medicinal virtues.—A large part of the soil of Chili is unproductive. The extensive portions of its surface covered by lofty and precipitous mountains, too cold for vegetation, or too scantily covered with earth to sustain it; the deserts of the north, where rain never falls; the large tracts covered by the primitive forest trees, so huge and dense that the settler despairs of felling them; and the districts inhabited by warlike Indian tribes, must all be deducted from the account; and the remainder forms but a small fraction of the area of the state. Yet the soil, when capable of tillage, is so fertile and yields crops so abundant, that Chili exports very considerable amounts of cereals and meats to California and other countries. Of its provinces, 2, Atacama and Coquimbo, do not grow a sufficiency of grain or cattle for home consumption; but the other 11 not only supply themselves and these, but exported in 1850 $2,693,545 worth of cereals, and in 1857 $2,242,354. The wheat crop of 1850 was estimated at 11,250,000 bushels; the number of horned cattle was 1,125,000, and 281,250 were slaughtered that year. *Charqui*, or beef dried in the sun, forms a considerable article of export as well as of home consumption. Santiago, Valparaiso, Concepcion, Ñuble, and Chiloe are the provinces which export the largest quantity of agricultural products. The principal grains grown are wheat, barley, oats, and maize; rye does well, but is not grown because there is no demand for it. Beans are a very large and important crop, and peas are extensively cultivated. In the southern provinces potatoes of excellent quality are grown. Ñuble, Concepcion, Valdivia, and Chiloe produce large quantities of timber and lumber. Many of the forest trees of Chili are of great value for building and ornamental purposes. The araucaria, a species of pine, the alerce, a cypress, with a dark rich heart-wood, the roble, tiqui, mañu, muermo, and mayten are all valuable and durable woods. The coligue, a species of bamboo, is in very considerable demand for thatching roofs.—The animals of Chili are not as numerous as those of the countries east of the Andes. The mammals are comparatively few. M. Gay, an eminent Chilian naturalist, enumerates 7 species of *cheiroptera*, mostly of the bat tribe; 12 species of *carnivora*, embracing 4 of the cat tribe, 3 foxes, 1 weasel, 2 polecats, the nutria, and the otter; 6 species of the *phocidæ*, embracing the seal and his congeners; 1 marsupial, the *didelphys elegans*, peculiar to Chili; 12 genera and 25 species of rodents, of which 12 belong to the mouse family; the chinchilla and its congeners, and the cavy or mountain rabbit. There are only 2 species of the *edentata*, the dasypus and pichiciego, the latter a very rare animal, found only in Chili. There are 3 ruminants, the guanaco, the largest of the llama tribe, and 2 of the deer tribe, the pudu and the güamul. There are 4 species of *cetacea*, 2 dolphins, the sperm whale, and the right whale. There are 11 species of *reptilia*, 5 of which are saurians, 4 ophidians, 1 frog, and 1 toad. The birds are more numerous. The *raptores*, embracing the condor, the vultures, hawks, and owls, are largely represented. The great order of *incessores* has numerous representatives of its every tribe and family, many of them of superb plumage, and some of wonderful powers of song. The dove and pigeon tribes are also found in considerable numbers, and the waders (*grallatores*) and swimmers (*natatores*) are almost numberless, several of the species being peculiar to the western coast of South America. Among the fishes, we find 3 species of the perch tribe, all new; 1 of the *atherinidæ*, the kingfish; 3 of the *siluridæ*, one a new genus and species; 2 *clupeidæ*, both new, one a new species of the shad; 1 *cheirodon*, a new genus of the *characini* family, and a new myxinoid, having an affinity with the lamprey eel of our northern waters. Crustaceans and mollusks are abundant, especially in Chiloe and the other southern provinces, but have not been very fully examined. The chonos, a peculiar species of oyster, exists in great quantities along the coast, and forms a favorite dish with the inhabitants.—Chili is divided into 13 provinces, each of which is subdivided into several departments and districts. There are beside 3 colonies. The following table gives the population of Chili in 1858, according to the census taken Dec. 31, 1857:

Provinces.	Pop.	Provinces.	Pop.
Arauco	48,995	Magellanic colony	158
Atacama	55,567	Maule	163,997
Aconcagua	121,654	Nuble	110,219
Chiloe	63,743	Santiago	298,118
Colchagua	206,919	Talca	84,461
Concepcion	122,281	Valdivia	31,958
Coquimbo	119,991	Valparaiso	124,000
Juan Fernandez col'y.	186		
Llanquihue colony	8,826	Total population	1,558,658

This shows an increase of 119,199 since the census taken at the end of 1854. We subjoin a list of the principal occupations of the people, according to the census of Dec. 31, 1857:

	Men.	Women.
Devoted to commercial pursuits	11,150	208
Field laborers	124,361	226
Miners	17,430	218
Devoted to husbandry	10,749	1,019
Surveyors	47	....
Engineers	77	....
Military men	3,568	....
Lawyers	289	....
Devoted to needlework	16	65,015
Servants	13,684	16,590
Shoemakers	10,412	797
Carpenters	9,449	....
Masons	2,875	....
Muleteers	6,565	....
Devoted to spinning	157	60,198
Cooks	640	20,684
Devoted to washing clothes	9	19,368
Mariners	1,580	....
Manual laborers	9,111	....
Weavers	204	24,591
Smiths	2,606	....
Tailors	3,433	6

The foreign population was estimated in 1854 at 19,669, viz.: 11,324 natives of the Argentine confederation, 680 Americans, 599 Peruvians, 1,934 English, 1,929 Germans, 1,650 French, 915 Spaniards, 899 Italians, 168 Portuguese, and 71 Chinese. To these should be added the tribes of independent Indians, of whom no census has been taken, but who are estimated at 25,000 or 30,000. Some of them, though hostile to the Chilians, are considerably advanced in civilization, while others are warlike and ferocious, and derive most of their livelihood from their forays upon the white inhabitants. These independent Indian tribes deserve a more extended notice than our space will allow. They alone, of all the American tribes who came in contact with the Spanish or Portuguese invaders, have maintained their independence, notwithstanding a war of extermination was waged against them for a century and a half, in which all the appliances of civilization, all the bravery of the ablest commanders and the most experienced and veteran troops, were brought to the work of their destruction. Aptly named the Ishmaelites of the new world, the best armies of Spain were powerless to drive them from their mountain fastnesses, or to subjugate them to the foreigners they hated. In this protracted contest, which ended in 1724 with the acknowledgment of their independence, the bravery, patriotism, and humanity of their leaders, the valor and devotion of the troops, the burning love of country, which led even the weaker sex to undergo the severest hardships to rid themselves of their foes, all constitute a heroic page of history. Of the other inhabitants of Chili, the Chilenos, as they call themselves, not more than ⅓, and perhaps not more than ¼, are of pure Spanish descent; the greater part are of mixed blood, as their forms, features, and hair testify. South of the Biobio there are considerable numbers of Indians who have been reduced to subjection by the dominant race, and are employed as peons, or farm laborers, and sometimes, though rarely, as *inquilinos*, or tenants, on the *haciendadas*, or large farms of that region, rendering a kind of feudal service, and making their payments of rent in labor or in kind.—The Chilians are more enterprising than the inhabitants of most of the South American states, and the haciendados or planters, and merchants, often accumulate large amounts of property. With the exception of those destined for the learned professions, they have generally but little education. The men are usually slender, and to the casual observer appear wanting in muscular development; but Lieut. Gilliss affirms that they possess much more strength than the men of other nations. He was more than once surprised by seeing men, far from robust in appearance, take a load of 350 to 400 lbs. and trot off with it, for half a mile, without complaint. The women have fuller and rounder figures, and are generally pretty. They seem to have more intelligence and higher aspirations for intellectual culture than the rougher sex. The dress of the Chilians of the higher classes is in the French style, except that the inevitable poncho (a striped blanket, with a hole in the centre for the head to pass through) is in universal use with both rich and poor. The ladies also copy the French fashions, except in a constant use of the shawl, both indoors and out. The poorer classes dress more like the guachos of the eastern states of South America, and are far from tidy in their apparel. In manners, they are gay, social, hospitable, and generous, but retain in some degree the bigotry and indolence of their Spanish ancestry. Crimes are of comparatively rare occurrence, but gambling is an almost universal passion; the most opulent planter and the poorest peon are equally addicted to it, and from the recklessness of their playing, the rich man of to-day may be a pauper to-morrow. The *chicha*, a fermented liquor made from grapes, green apples, and other fruits, and very intoxicating, is a constant drink, and often inflames the passions of the lower classes and the Indians to fury. Licentiousness exists to an alarming extent, and the diseases it engenders are among the most fatal in the country. Illegitimacy is common. In Santiago ⅕ of all the births are illegitimate; in Valparaiso, ¼. Blindness and goitre, the effect of the glare of the sun upon the snow, and of the magnesian impregnation of the water used for drinking, are very common. The religion of Chili is Roman Catholic, and the laws tolerate no other; but in practice, there is no very marked opposition to the quiet performance of worship under other forms of faith.—Within a few years the government has devoted much attention to the subject of education, and now no other South American state has so efficient an educational system. The tables on the next page present in detail the educational statistics of Chili for 1857. Of the schools in the first table, 562 are for male pupils, 295 for females. The whole number of pupils, male and female, is 33,351, being in the ratio of one pupil for every 9.35 persons of school age in the republic. The school books for the government schools are furnished by the republic. In 1857, the number distributed was 63,521 volumes. There are 2 normal schools for the education of teachers, one for males, the other for females. The number of pupils in the male school in 1857 was 109, in the female 51. The male normal school had 7 professors, whose salaries amounted in the aggregate to $4,200. The course of study continues 3 years, and embraces the following topics: agriculture, arithmetic, geometry, penmanship, geography, cosmography, linear drawing, French, Spanish, grammar, history (American, Chilian, and sacred), religious instruction, exercises in reading, vocal music, the art of teaching, and gymnastics. The course in the female normal school is similar. The instruction in most of the collegiate schools or academies embraces the following topics: arithmetic, algebra, penmanship, the catechism of Benitez, cosmography, drawing, French, Latin, English, Spanish, grammar, ancient and sacred history, geography, geometry, and book-keeping. In a few of them the studies embrace the Greek and German languages, ancient and modern history, literature, the higher mathematics, natural sciences,

TABLE I.—SCHOOLS.

Provinces.	Population, Dec. 31, 1857.	Government schools.	Pupils in government schools.		Municipal schools.	Pupils in municipal schools.		Private or select schools.	Pupils in private schools.		Total schools.	Total pupils in schools.	
			M.	F.		M.	F.		M.	F.		M.	F.
Atacama	55,567	20	603	432	9	260	20	10	105	362	39	968	744
Coquimbo	119,991	36	1,285	337	13	291	194	26	282	359	75	1,858	990
Aconcagua	121,654	37	1,122	458	2	124	..	7	251	106	46	1,497	559
Valparaiso	124,600	14	472	108	17	725	446	66	641	1,070	97	1,838	1,624
Santiago	293,113	45	1,938	866	27	974	501	95	1,425	1,117	167	4,337	2,484
Colchagua	206,919	49	1,650	616	..	..	.	36	647	174	85	2,297	790
Talca	84,461	24	909	151	2	140	64	13	91	195	39	1,140	410
Maule	168,807	44	1,865	529	6	209	29	18	237	108	68	2,311	661
Nuble	110,219	22	661	165	3	83	97	10	58	123	35	802	385
Concepcion	122,281	44	1,684	516	3	..	134	34	123	140	81	1,786	7,911
Arauco	43,995	20	684	186	2	65	26	2	..	25	24	749	237
Valdivia	31,988	22	652	147	4	29	..	7	28	37	33	909	184
Chiloe	65,748	29	1,890	233	1	20	..	38	1,452	66	68	3,362	299
Totals	1,554,833	406	14,865	4,609	89	3,049	1,511	362	5,340	3,917	857	23,254	10,037

TABLE II.—SPECIAL SCHOOLS.

Provinces.	Night schools for artisans.	No. of pupils.	Schools for deaf mutes.	No. of pupils.	Normal schools.	No. of pupils.	Schools of arts and trades.	No. of pupils.	Day schools for adults.	No. of pupils.	Schools of fine arts, &c., painting, sculpture, music, and obstetrics.	No. of pupils.
Coquimbo	3	118	..	..	..	..	..	..	..	..	..	..
Aconcagua	2	71	..	..	..	..	..	..	..	..	..	..
Valparaiso	1	33	..	..	..	..	..	..	..	..	..	..
Santiago	4	509	*2	14	*2	160	1	98	1	20	4	117
Colchagua	1	25	..	..	..	..	..	..	..	..	..	..
Talca	1	...	..	..	..	..	1	17	..	..	..	..
Maule	3	145	..	..	..	..	..	..	..	..	..	..
Concepcion	3	136	..	..	..	..	..	..	..	..	..	..
Totals	18	1,042	2	14	2	160	2	115	1	20	4	117

* One each for males and females.

TABLE III.—ACADEMIES.

Provinces.	Government academies.	No. of professors or teachers.	Aggregate salaries of teachers.	No. of pupils (all males).	Private academies for boys.	Private academies for girls.	Male teachers.	Female teachers.	Male pupils.	Female pupils.	Conventual colleges or academies.	No. of professors or teachers (males).	No. of pupils (males).	Total pupils in all academies.
Atacama	..	..	....	....	1	2	6	11	64	84	..	..	..	148
Coquimbo	2	15	$8,280	160	2	2	7	6	86	95	..	..	..	341
Aconcagua	1	6	2,500	82	..	..	..	..	..	..	..	..	..	82
Valparaiso	..	..	....	....	5	2	22	18	280	128	..	..	..	408
Santiago	3	55	36,155	1,052	8	13	44	90	651	799	6	34	229	2,731
Colchagua	2	10	2,600	217	..	..	..	..	..	..	..	..	..	217
Talca	1	8	6,000	78	2	2	..	9	..	103	..	..	..	181
Maule	1	4	1,700	18	..	..	..	..	..	..	..	..	..	18
Nuble	1	2	1,100	29	1	1	1	7	20	42	..	..	..	91
Concepcion	1	15	12,100	206	1	2	2	13	43	152	..	..	..	401
Valdivia	1	4	1,100	15	..	1	..	2	..	46	..	..	..	61
Chiloe	1	5	1,400	25	..	..	..	..	..	..	..	..	..	25
Totals	14	124	$72,935	1,882	20	25	92	151	1,144	1,444	6	34	229	4,729

&c. The national institute, established at Santiago, which is the government university, is divided into 2 sections, the preparatory and the university. The preparatory section has 2 courses, that of the humanities, occupying 6 terms, and that of mathematics, occupying 5. The instruction in these is but little if at all in advance of the best academies named above. The branches taught in the university are law studies, including political economy, forensic practice, and natural, international, Roman, Spanish, and canonical law, engineering, natural science, and medical studies. Instruction in both sections is free. The number of pupils in the preparatory section in 1857 was 693, of whom 225 were boarders, and the remainder day scholars. In the university section the number of pupils was 201, none of them boarders. Beside the national institute, there is another institution called the conciliar seminary, combining the college and theological seminary. The system of instruction is not as extensive as that of the national institute, but includes 4 years' study of the humanities (which in Chili comprise very little of the classics except Latin, in which they are very full, or of the higher mathematics), and a course of superior instruction occupying 2 years, and mainly taken up with ethical, metaphysical, and theological topics. This seminary had in 1857, 158 pupils, of whom 141 were boarders. The annual charge was $120. There is also at the capital a school of agriculture, a naval school under the direction of the minister of marine, and a military school under the care of the minister of war. The national library, also at the capital, contains some 22,000 volumes, and is especially rich in theological works, having been originally founded by the Jesuits.—The agriculture of Chili is not of the highest character. The soil of the arable portions is very fertile, and will yield, even of the cereals, from 30 to 60 fold; but with the exception of a tolerably skilful system of irrigation, the farmers and planters are grossly ignorant of improved methods of agriculture. Their ploughs are the rudest and most uncouth instruments imaginable, only scratching the earth to the depth of 2 or 3 inches; of subsoiling, the application of manures, underdraining, and rotation of crops, they know nothing; and the stubborn adherence of the peons, like that of ignorant laborers everywhere, to old methods handed down from one generation to another, is a most effectual barrier to any considerable improvement. Still, with all these drawbacks, so fertile is the soil, and so much is it enriched by the detritus brought down by the mountain streams, that agriculture is a very profitable pursuit. The farms are usually very large, frequently comprising several thousand acres, and herds of cattle 5,000, 10,000, or 20,000 in number, are pastured on the elevated plains, and tended by the rough guachos, till the period for their slaughter arrives. The hacendados or planters usually reside in the cities, leaving their plantations under the care of mayordomos or overseers, and only visiting them occasionally. The largest plantations in the country are those of La Compania and Las Canteras, the latter with an area of over 25,000 acres. Smaller estates are called *chacara hacienda* and also *hacienda*, and the small farms are called *quinta*. The daily wages for laborers vary from 15 cents to 37 cents, and in harvest time amount to $1. In the northern part of the country the population is far more laborious than in the southern region, where few laborers are to be found above the age of 22. As soon as the young men marry in the southern provinces, they yearn for independence and live upon a little patch of land, which is generally presented to them by the planters. This class of laborers are attached to the plantation, and are called *inquilinos*. In consideration of the land and accommodation granted to them, they are bound to assist the planter during the *rodeos* (cattle fair) and the *trilla* (threshing season).—Chili has given but little attention to manufactures. The government has within a few years endeavored to introduce them by offering exclusive privileges to manufacturers for a term of years, but with little success. Apart from the manufacture of ponchos, which, though woven in the rudest looms, possess some qualities which the French and English goods have never been able to attain, and the coarser kinds of work in gold, silver, copper, and iron, the very imperfect tanning of a small quantity of leather, and the simpler processes of the soapboiler and candlemaker, the production of lumber, and the preservation of dried meats, there is little that can be called manufacturing in the country.—In 1855 the imports were $25,988,925, in 1856 $19,804,041, and in 1857 $31,800,209. The exports in 1855 were $19,110,589, in 1856 $18,159,522, and in 1857 $20,126,461. The following table particularizes the exports of the latter year:

Bars of gold and gold coin	$497,786
Silver and silver ores	4,725,655
Copper and copper ores	10,760,589
Wheat	1,050,718
Flour	798,112
Biscuit, bread, and frangollo	108,228
Barley	257,970
Beans	24,904
Peas and maize	4,885
Potatoes	35,506
Wine and chicha	1,612
Nuts and dried and fresh fruits	89,053
Salt beef	10,880
Charqui, or jerked beef	104,178
Butter and cheese	86,055
Tallow and lard	2,729
Hides, horns, and hoofs	501,104
Goat, sheep, and chinchilla skins	40,861
Wool	397,648
Assorted provisions	27,189
Dried fodder	41,790
Cords, rope, and rigging	18,464
Planks and lumber	265,287
Coal	176,765
Guano	5,600
Miscellaneous	148,009
Total	$20,126,461

The principal imports are distilled spirits, ale and porter, alpaca goods, baizes, bedsteads, books, buttons, cabinet ware, calicoes, candles, canvas, carpets, carriages, cassimeres, cigars, cloths, clothing, coal, cotton and woollen goods, crape shawls, drugs, earthen and glass ware, gloves, gold in bars and coin, gunpowder, horned cattle and horses, household furniture, indigo, iron and iron goods, jewelry and cutlery, leather, linen goods, machinery, matches, maté, merino cloths, muslins, molasses, oils, paints, paper, perfumery, pianos, quicksilver, raisins, rice, rigging, salt, satin goods, shoes and boots, silks, silver coin and bars, soap, steel, straw goods, sugar, tea, tin, tobacco, umbrellas and parasols, velvets, watches, wax, wines, and wool shawls. The following table gives the quantities of sugar, coffee, tea, and iron imported from 1844 to 1855:

Years.	Sugar, arrobas.	Coffee, cwt.	Tea, lbs.	Iron, cwt.
1844....................	245,217	1,989	26,713	38,600
1845....................	330,307	1,722	31,552	52,963
1846....................	607,427	1,941	25,227	18,991
1847....................	511,437	921	33,728	14,968
1848....................	413,956	2,064	49,568	32,989
1849....................	227,097	1,447	53,082	43,956
1850....................	508,251	2,737	36,518	58,969
1851....................	850,729	1,670	80,447	38,842
1852....................	730,757	4,188	104,207	115,985
1853....................	711,635	3,069	65,895	14,176
1854....................	781,427	2,954	89,960	52,859
1855....................	1,513,515	4,518	112,264	155,740

The imports of sugar into Valparaiso from Jan. 1 to Aug. 15, 1858, were 336,926 arrobas, and the stock on hand at the latter period was 94,000 arrobas. The following table shows the navigation of Chili in 1857:

Ports.	No. of Vessels entered.	Tonnage.	No. of Vessels sailed.	Tonnage.
Caldera....................	....	....	....	....
Huasco....................	....	....	....	....
Coquimbo....................	292	86,732	309	94,665
Herradura....................	204	41,909	198	45,615
Papudo....................	....	....	....	....
Valparaiso....................	1,117	351,836	1,098	335,436
Tuman and Llico..........	....	....	....	....
Constitucion....................	184	81,151	188	81,377
Curanipe....................	13	1,092	13	1,052
Talcahuano....................	278	88,196	287	63,974
Tomé....................	180	44,876	190	44,376
Penco....................	83	7,810	83	7,810
Lirquen....................	18	2,547	18	2,547
Coronel....................	114	80,511	102	40,718
Lota....................	133	39,594	135	40,375
Corral....................	96	27,101	94	26,244
Ancud....................	137	41,936	140	42,578
	2,759	797,841	2,785	799,542
To which should be added for other ports, say	125	40,000	120	37,000
Total....................	2,914	837,841	2,905	836,542

The exports of Chili to England were, in 1854, £1,380,563; in 1855, £1,925,271; and in 1856, £1,700,776. The imports of English produce were, in 1852, £1,167,494; in 1853, £1,264,942; in 1854, £1,421,855; in 1855, £1,330,385; and in 1856, £1,946,010. The imports of foreign and colonial produce from England were, in 1854, £43,589; in 1855, £56,688; and in 1856, £64,492. The English exports to Chili in the half year ending June 30, 1858, were £602,956, showing a decrease of £120,492 compared with the same period of 1857. The exports of Chili to France were $218,000 in 1851, $250,000 in 1852, $240,000 in 1853, $650,000 in 1854, and $930,000 in 1855. The imports from France were $4,800,000 in 1851, $3,550,000 in 1852, $4,400,000 in 1853, $4,000,000 in 1854, and $5,600,000 in 1855. The commercial intercourse of Chili with the United States has been very variable. In the earlier years of Californian emigration she sent large quantities of flour, grain, and lumber to that state, and took freely of our goods in return. Since that time her exports to this country have continued in large amount, but she receives little except money in return, the balances being mostly settled in Europe, where she is a debtor. The following table shows the amount of her commerce with the United States for several years:

Exports.		Imports.	
1849..........	$3,589,588	1849..........	$1,108,345
1850..........	4,012,612	1850..........	1,911,479
1851..........	3,515,285	1851..........	4,394,211
1852..........	2,062,160	1852..........	2,043,536
1853..........	2,214,158	1853..........	2,157,320
1856..........	2,467,819	1856..........	276,990
1857..........	3,742,349	1857..........	438,967

—The government of Chili is professedly republican, and its offices elective; but practically it has been hitherto little more than a dictatorship, in which, while the forms of the constitution were tolerably preserved, the legislative, executive, and judicial functions were exercised by the party who had succeeded in seizing the reins of government. The president is elected for 5 years, and is eligible for a second term, but not for a third, until a period of 5 years has elapsed. He is assisted by a council of state composed of 13 persons, all of his own choosing, and removable at his will, of whom, however, the heads of departments must be 4. The legislature consists of a senate of 20 members elected for 9 years, one-third of whom go out of office every 3 years, and a house of deputies, consisting of 1 for every 20,000 inhabitants, elected for 3 years. Government officers may be members of either branch of the legislature, and still hold their offices. They may, and often do, also represent more than one constituency. The election of the legislature is usually entirely in the hands of government, the mass of voters being the members of the national guard, who are appointees of the president, and the laborers and peons of the plantations and mines, who are entirely under the control of the wealthy proprietors, whose interests are the same as the president's. Up to 1850 there had never been any opposition party in the legislature. At that time one was organized by the friends of the cabinet removed by the president a month or two before. Soon after the adjournment of the two houses, the most prominent of the opposition members were banished, or otherwise sent out of the way. The judiciary consists of primary courts, 3 courts of appeal, and a supreme court. The judges of the higher courts are appointed for life, or rather during good behavior, and can only be removed by impeachment. There are 4 cabinet ministers, viz.: of foreign and home affairs, of finance, of war and marine, of religion and education. They are responsible for every official act, and cannot leave the country for 6 months after the expiration of their term of public service. No order or document from the president is legal without the counter-signature of the minister to whose department it belongs. Slavery is prohibited by law, and all traffic in it forbidden, and every person who treads the soil is declared free. According to the report of the war department, presented to congress Aug. 4, 1858, the standing army amounted to 2,193 men, being 463 less than the number required by law, and not including 469 pensioners and 48 military scholars. The officers of the army consist of 4 generals of division, 8 brigadier-generals, 6 colonels, 27 lieutenant-colonels, 48 majors, 100 captains, 18 adjutants, 64 lieutenants, and 74 ensigns; total, 349. The existing police force amounted to 2,323 men, requiring for their support an annual expense of $461,449. An increase of 771 men, with an expense of $128,002, is proposed. The civic guard or militia consists of 40,466 men, viz.: 682 artillery, 24,331 infantry, and 15,453 cavalry; the marine, of 2 corvettes, 3 brigantines, 1 frigate, and 1 war steamer, the whole mounting 71 cannon. From the report of the secretary of state in the marine department, presented to the Chilian congress Aug. 4, 1858, it appears that the mercantile navy of Chili, which in 1848 consisted of only 105 vessels, tonnage 12,628, numbers at present 269 vessels, tonnage 62,209; showing an increase in 10 years of 164 vessels, and of 49,581 tons. The coast trade of the Chilian flag exclusively presents the progressive increase shown in the following table:

Years.	Vessels.	Tonnage.	Years.	Vessels.	Tonnage.
1853	109	20,247	1856	166	35,077
1854	115	21,116	1857	180	37,985
1855	128	29,694	1858	196	40,402

In the province of Chiloe 1,958 small vessels were (Aug. 4, 1858) employed in domestic traffic, with a crew of 9,000 men. The total expenses of the navy department in 1857 amounted to $420,191 10, and the budget for 1859 fixes the expenses at $438,143 10½. There is a state prison at Santiago, with nearly 400 prisoners, and a penal colony on the straits of Magellan, which in 1855 contained 153 convicts. The islands of Juan Fernandez, formerly occupied by the government as a penal colony, are now inhabited by free settlers. The revenue of the government in 1856 was $6,509,867, and its expenditures $5,589,346. In 1857 the revenue amounted to $6,419,142, showing a decrease of $90,725, which is attributed to the commercial crisis, and the consequent falling off in the customs duties. The foreign debt was contracted in England, about half in 6 per cent. and half in 3 per cent. bonds, and amounted, Jan. 1, 1858, to $6,014,000. The home debt in June, 1858, amounted to $2,640,950.—There are several railways finished or in course of construction: the Copiapo road, from Caldera to Copiapo, a distance of 54 m., which has been in operation several years; the road from Valparaiso to Santiago, of which 60 m. are now completed; the road from Santiago to Talca, the stock for which has been taken up; between Talcahuano and Concepcion, stock subscribed; between Togoo and Tamaya a road has been projected. The road from Valparaiso to Santiago cost near $5,000,000, and the cost of the works as far as the top of Monte Negro is estimated at $3,000,000, and of the whole of the line up to Santiago, at $10,000,000. The total receipts of the railways in 1857 was $48,596 50. During the first 4 months of 1858 they reached $77,458 70, viz.: $51,498 20 for passengers, and $25,960 50 for merchandise. From the report of the minister, presented to the Chilian congress, Aug. 4 1858, it appears that the government had decided to buy the shares of this railroad. The southern railroad is finished as far as the river Maypu, and the bridge over this stream was opened to the public Sept. 15, 1858. Southward from Maypu the works reach about 30 m., and it is expected that in Feb. 1859, the rails will be laid as far as Rancagua, the first town on the line, and the road will be opened to the public in the middle of 1859. The branch in construction along the Alameda, for affording greater facilities to traffic, will soon be ready. The total expense as far as Rancagua amounts to $2,500,500. There are also 2 telegraph lines, one from Santiago to Valparaiso, and another connecting Copiapo with the mining districts, and the minister, in his report of 1858, asks congress for an annual grant of money for the establishment of new lines.—Prior to 1450, the present territory of Chili was inhabited by the ancestors of the Indian tribes now found there, who seem to have all descended from a common stock, and called themselves by the general title Alapu-che, people or children of the land. They were subdivided into a number of tribes, but all spoke a common language. In 1450, the reigning inca of Peru, Yupanqui, formed the project of extending his sway over the Chilian territory, and having stationed himself with a powerful army in Atacama, despatched his trusty lieutenant, Chinchiruca, with 10,000 men, southward to subdue the Alapu-che. With that tact which characterized the policy of the incas, Chinchiruca sought to win rather than conquer these rude and warlike tribes; and such were his powers of persuasion, that tribe after tribe yielded to the "children of the sun," and in 6 years' time the inhabitants of northern Chili, for 600 m. from the Atacama frontier, paid fealty to the Peruvian monarch. But his sway was destined to receive a check. Pushing further south, his officers and soldiers encountered on the further bank of the river Rapel a warlike tribe of the Alapu-che, known as the Purumancians, who returned a defiant answer to the summons and representations of the inca, and refusing all overtures for peace, attacked the Peruvian troops; a desperate battle followed, lasting 3 days, in which both armies were too thoroughly shattered to renew the conflict. Upon hearing of the result of this battle, Yupanqui wisely resolved to forbear offensive warfare, and to maintain only what he already possessed. When, some 80 years later, the Spaniards had overthrown the empire of the incas, they found Chili owning a nominal allegiance to the Peruvian monarch, and resolved to subjugate that country also; and Diego Almagro, from the double motive of glory and gold, led an expedition across the desert of Atacama and the mountain passes of the Andes. When he reached

Copiapo, ¼ of his Spanish troops and ¾ of his Indian allies had perished from cold, fatigue, and starvation. They were received by the people very kindly, and met no opposition till they reached the territory of the Purumancians, where, like their predecessors, they found a foe so brave that they were fain to pause and retrace their steps. Almagro and the remainder of his force returned slowly and sadly to Peru, and 5 years elapsed ere another expedition to Chili was attempted. Pedro Valdivia, a prudent and able commander, was selected for this service, and so well did he arrange his plans that, though occasionally meeting with hostile bands of Indians, he penetrated without serious difficulty to the river Mapocho, and encamped upon the present site of Santiago. Finding the location pleasant and the adjacent country fertile, he here founded a city, to which he gave the name of the patron saint of Spain. Scarcely had he fortified himself in his new town, however, before the Indians, availing themselves of his temporary absence, assailed it, and would have taken it but for the hasty return of the commander; but though balked of their intended prey, they returned again and again to the charge, till Valdivia was compelled to send for reënforcements from Peru. After the arrival of these he proceeded southward, and though the Purumancians, the ancient foes of Almagro and of the inca's forces, seem to have offered no effectual opposition to his progress, he found after crossing the Maule, which formed their southern boundary, a new foe, braver, fiercer, and readier for the fray than any he had hitherto encountered—the Araucanians, now for the first time appearing on the page of history. So terrible and unexpected was their first attack, that it well nigh annihilated Valdivia's army, and compelled him to retreat to Santiago, and eventually to return to Peru for further reënforcements. He returned in 1550 with a large and well appointed force, and founded the city of Concepcion, on a site now known as Penco. Here the Araucanians rallied their forces, and with 4,000 men under Aillavalu, attacked the new city, and, with a more determined valor than any Spanish general had before witnessed, resisted the skill and bravery of the Spanish troops. It was not until the fall of their leader that they would yield an inch of ground. Conflict after conflict followed. The Indians after a time were led by a young Araucanian captive named Lautaro, who had been reared in Valdivia's family, whose skill as a commander made him a formidable foe. In 1553, Valdivia was captured by the Indians, and put to death. Emboldened by their success, the Indians destroyed Concepcion, resisted all attempts to rebuild it, and eventually marched upon Santiago, and placed it in great peril, but were finally repulsed, and the brave Lautaro fell, not under the sword of his foes, but from the dart of an enraged Indian. Under the command of the count Mendoza, the Spanish forces, often reënforced, still persisted in their conquering policy, and waged a doubtful war for nearly 50 years with this brave and warlike tribe; often defeated and reduced to extremity, but as often, perhaps by the skill of higher civilization, driving the foe from their strongholds, and winning new lands for their lord, his most Catholic majesty of Spain. More than one brave Spanish commander, and more than one Indian chieftain as brave, fell in these bloody encounters. All efforts to effect a permanent peace were unavailing. At length, when more than 100 years had been wasted in the effort to drive the Indians from the territory south of the Biobio, to which the Spaniards laid claim, they were compelled in 1665 to make a treaty of peace, and acknowledge the independence of these mountain tribes, and establish the limits of their territory. This peace lasted till 1723, when war broke out again, and lasted, with slight intermissions, for 50 years. The subsequent history of the state may be briefly narrated. It remained a viceroyalty of Spain till 1810, when a revolution commenced, which terminated in 1817 in its independence and its organization as a republic. Though less revolutionary than some of the South American states, it has passed through several attempted forcible changes of the government. The most formidable, as well as the most recent of them, occurred in April and September, 1851. The first was instigated and commanded by Col. Urriola, who, in a severe battle between the insurgents and the government forces at Santiago, lost his life. Some 200 or 300 were killed, and many more wounded. The revolt of September was led by Gen. Cruz, the defeated candidate for the presidency at the preceding election. At one time it threatened to prove a revolution, as in nearly every conflict the insurgents were victorious; but at length the money of the government effected what the valor of its armies could not, and after 4,000 soldiers had fallen on the battle-field and the productive industry and commerce of the country had suffered untold injury, the revolt was quelled and an amnesty granted to the insurgents. The improvement of the people in intelligence, wealth, and social progress has been rapid within the last 6 years.—The president of the republic is Manuel Montt, who was elected for a second term, Oct. 18, 1856. The success obtained by the friends of the government in the new elections for congress in the summer of 1858, in spite of the united opposition of the liberal and conservative party, is considered to augur well for the reëlection of Montt in the next presidential campaign of 1861. The differential duties on goods from the United States, Great Britain, Brazil, and other principal commercial countries have been abolished. A new tariff was introduced May 8, 1851. Under Montt's administration, a civil code has been given to Chili, tribunals of commerce established, a discount and deposit bank founded in Valparaiso, and a bank to advance money on real estate opened Jan. 1, 1856. A law has been introduced for converting the tithes into a church and school tax, and another for the organization of the municipal institutions. The resolution of the senate to readmit the Jesuits into Chili was rejected by the second chamber in 1854. Treaties of commerce were concluded with France, June 30, 1852; with Sardinia and the United States, 1856; with the Argentine confederation, April 30, 1856; and with Great Britain, Nov. 30, 1856. Walker's invasion of Nicaragua led President Montt to conclude, in Nov. 1856, a political alliance with Ecuador and Peru, which was also joined by Costa Rica. The object of the alliance was mutual protection, and to enable all South American states to unite against attacks from abroad.—The mint emitted in gold and silver coin, from Jan. 1, 1850, to Jan. 1, 1858, $18,103,877, comprising in this sum the recoinage of the old money excluded from circulation. In Aug. 1858, the amount emitted was about $61,000. To create a greater abundance of the circulating medium, a measure had been recently introduced into the legislature, authorizing the executive to purchase gold and silver bullion at the prices current in the market. A further relief in the money market was expected from another measure pending before congress, authorizing government to warrant the bills of the *Credito Hipotecario*, and to modify this institution. Efforts to promote the prosperity of the country were visible in every direction. The most prominent project before congress was the establishment of towing steamers in the straits of Magellan, and its accomplishment would bring Chili 1,500 m. nearer to Europe, America, the West Indies, Brazil, and to almost all other countries of the globe. Government has authorized the foundation of an anonymous society for mutual insurance against fire, under the name of the *Union Chilena*. The establishment of a Chilian Lloyd was contemplated, and a chamber of commerce was created at Valparaiso. Foreign skill is liberally used. Engineers and artillery instructors have been sent from France, and the metallic life boats of Francis from the United States. The merchants of Valparaiso proposed to devote $250,000 per annum to the establishment of steamers connecting that city with Montevideo and Buenos Ayres, and there was every probability of the realization of this project. Agriculture was beginning also to receive a fuller share of attention, and Don Benjamin Vicuña Mackcuna has been intrusted by the government with the compilation of a rural code. In order to prevent the scarcity of breadstuffs, felt at the end of 1856, agricultural statistical offices were to be organized in the provinces, noticing beforehand the approximate consumption of grain in each locality, recording its annual production, so as to make it easy to take in time preventive measures to remove an extreme scarcity. A privilego had been granted to Don Juan Pelle for establishing public shambles in Valparaiso, according to the best modern system, the establishment to be opened before the expiration of 1859. New civil courts were to be established in the department of Caupolican and Quillota, and in the city of Valparaiso. The government had adopted various resolutions favorable to colonization in the straits of Magellan, and the German colony of Llanquihue. The latter contained in Aug. 1858, 235 German families, and preparations were making for more arrivals, the father of each family to receive, according to art. 2 of the law of March 18, 1845, 25 square *cuadras* of land, and each son or daughter above 10 years of age, 12 square *cuadras*, on condition of paying $1 for every *cuadra*, payable in 5 instalments, the payment of the first liable to a delay of 2 years after the colonist's settlement on the land; title deeds only to be given to such colonists as have on their land a regular home, and at least 2 *cuadras* enclosed and cultivated; no sale or disposal of the land being valid unless a title deed has been granted by government. The establishment of a new colony near the city of Los Angeles, in the locality called Potrero de Human, where government possesses 681 *cuadras* of land, was projected, and instructions had been sent to the agents of Chili in Europe to promote emigration to those regions. The construction of another breakwater on the left bank of the river Cachapual was proposed. New regulations for the sale of Indian lands in the state of Arauco had been brought forward, with a view of civilizing this state and of putting a stop to the collisions with the Indians on the frontier. Thus we find the utmost zeal prevailing to push on the progress of the country. Nor were charitable works neglected. Beside other institutions in various parts of the country, there were in Santiago 47 sisters of charity, intrusted with the management of the several establishments in that city, independently of a central home wherein 150 girls are educated. Four sisters of Providence were to take charge of the Concepcion foundling hospital. In the Santiago lunatic asylum 96 patients were accommodated in Aug. 1858.—The number of pre-paid letters posted in Chili in 1857 was 613,729, of certified letters 410, of fined letters 126,297, of samples 6,509; of pre-paid newspapers 165,060, of fined newspapers 2,445; the letters posted exceeding 700,000, and the total number of letters, newspapers, and samples, 900,000. The receipts for postage amounted to $79,565 64.—Among the most prominent newspapers of Chili are *El Mercurio de Provincias* and *El Mercurio del Vapor*, published at Valparaiso. One of the best literary periodicals is the *Revista de Ciencias y Letras* of Santiago. The number of journals and periodicals is daily increasing. In Aug. 1858, appeared the first numbers of the *Revista Medica-Quirurjica* and the *Revista del Pacifico*, the latter accompanied by the *Correo Literario*, the first illustrated paper published in Chili, on the model, but on a smaller scale, of the humorous *Correo de Ultramar*, or *Museo de las Familias*, the articles in the new journal to be accompanied with lithographed caricatures.—The following works treat of the natural and political history, geography, customs, manners, and commerce of Chili: Havestad, *Chilidugu, seu Res Chilenses* (Münster, 1779); Molina's "History of the Conquest of Chili," and Molina's "Geographical, Natural, and Civil History of Chili" (Middletown, 1808); Hall's "Journal kept on the Coast of Chili" (London, 1825); Mier's "Travels in Chili and La Plata" (London, 1826); Pöppig's *Reise in Chili, Peru, &c.* (Leipsic, 1836); D'Orbigny, *Voyage dans l'Amérique Méridionale* (Paris, 1889); Gardiner, "A Visit to the Indians on the Frontiers of Chili" (London, 1841); Ried, *Deutsche Auswanderung nach Chili* (Valparaiso, 1847); Simon and Bromme, *Auswanderung und Colonisation von Südamerika mit besonderer Berücksichtigung des Freistaats Chili* (Baireuth, 2d ed. 1849); M. Claude Gay's "Natural History of Chili," 18 vols. of which have been published by the government; *Annales de la Universidad de Chili*, which have appeared since 1843, and since 1850 in monthly numbers; Von Tschudi's "Peru;" Lieut. Gilliss's "Report of the U. S. Naval Astronomical Expedition" (Washington, 1855–'58), 6 vols.; Lieut. Smith's "Araucanians." Cast (Stuttgart, 1849), Kindermann (Berlin, 1849), and Philippi (Cassel, 1851), have all written on the German emigration to Chili.

CHILIAN MILL, a machine for crushing ores, in use particularly for those containing the precious metals. It differs from the arrastre already described (see ARRASTRE), by employing, instead of flat stones dragged around the upright revolving axis, a pair of heavy stone wheels, shaped like mill-stones, and when new from 4 to 6 feet in diameter; cast-iron wheels are sometimes used instead of those of stone. The wheels are set in a very strong frame, one on each side of the shaft and near to it. As the shaft revolves, the wheels revolve on their axis, and are at the same time carried around with the shaft, crushing by their weight, and grinding as they twist around, whatever they roll upon. The bed is a flat solid block of stone of circular form, with wooden sides rising a foot or more in height; the whole forming a water-tight tub. As the ore is thrown into this tub, water is admitted on one side, and flows out over the other, carrying the slime and lighter portions of the crushed ore. The metallic particles that escape with these are collected in other apparatus below. A considerable proportion of the precious metal is caught in the tub, its particles forming with the mercury placed in it a heavy amalgam. In South America, where the Chilian mill was first used, it is run without water; but in the United States water is always employed. It is usually worked at the rate of 8 to 12 revolutions per minute, and, according to the hardness of the ore and the fineness to which it is reduced, crushes from 1 to 2 tons in 12 hours. The machine, though one of the oldest in use, and introduced by a nation not remarkable for mechanical skill, continues to be a favorite among those used for crushing ores. It is of simple construction, readily made from the rude materials found in the mining regions, and is very efficient in use.

CHILIAST. See MILLENNIUM.

CHILLICOTHE, or CHILICOTHE, a city, capital of Ross co., Ohio, on the right bank of the Scioto river, 45 m. in a direct line, or 70 m. following the windings above its junction with the Ohio, and 3 m. above the mouth of Paint creek, 45 m. S. of Columbus, and 96 m. N. E. of Cincinnati. Pop. in 1850, 7,100; in 1858, about 10,000. It is beautifully situated, 30 feet above the river, on a plain which forms the bottom of a valley, enclosed by 2 ranges of cultivated hills 500 feet high. The principal avenues follow the course of the stream, and are intersected at right angles by others, all lighted with gas, regularly planned, and many of them containing fine buildings. The 2 main streets, which cross each other in the centre of the city, are each 99 feet wide; Water street, facing the river, is 82½ feet wide; and the width of the others is 66 feet. A supply of water is obtained from extensive works erected at a cost of $75,000. Beside a court-house, jail, U. S. land office, 2 markets, and other public edifices, the city contained, in 1855, 14 churches, viz.: 1 Associate Reformed, 2 Baptist, 1 Episcopal, 1 Lutheran, 5 Methodist, 2 Presbyterian, and 2 Roman Catholic; 4 printing offices, issuing a daily and 4 weekly newspapers; 2 paper mills, 4 grist mills, 3 saw mills, 2 academies, and 3 banks. The assessed value of real estate in 1853 was $1,711,289. Chillicothe has advanced rapidly in wealth and population, owing partly to its geographical position, and partly to its facilities of communication with other cities. It is the centre of nearly all the trade of the rich farming country bordering on the Scioto, which is rightly considered one of the finest agricultural districts of the United States. The Marietta and Cincinnati railroad, lately completed, passes through Chillicothe, and by means of a steamboat from Marietta to Parkersburg, 9 m. distant, on the Virginia side of the Ohio river, opens a communication with the north-western railroad of Virginia. It also renders accessible the rich coal and iron mines of southern Ohio. The Ohio and Erie canal extends from Portsmouth, at the mouth of the Scioto, through this city, to Columbus and Cleveland. Chillicothe was founded by emigrants from Virginia in 1796, and from 1800 to 1810 was the seat of the state government. The old capitol, built in 1801, and in which the first state constitution was framed, has been torn down and replaced by an elegant building of Scioto freestone.

CHILLINGWORTH, WILLIAM, an English divine and controversial writer, born at Oxford in Oct. 1602, died at Chichester, Jan. 30, 1644. He was admitted a scholar of Trinity college, Oxford, in 1618, and elected a fellow in 1628. He made great proficiency in divinity and mathematics, and displayed remarkable skill in disputation. The theologians and university scholars in his time were constantly debating the comparative merits of the churches of England and Rome, and Chillingworth, while delighting in ingenious argumentation, became unsettled in his opinions. A Jesuit, named Fisher, convinced him of the necessity of an infallible rule of faith, whereupon he immediately abjured Protestantism and proceeded to the college of the Jesuits at Douay. He had no sooner taken this step than he "doubted that his new opinion was an error," and by invitation of Laud, then bishop of London, he returned to Oxford to reëxamine the whole question. He soon abandoned the communion of the Roman church, and in 1634 wrote a refutation of the arguments which had induced him to join it. Engaging in controversy with several distinguished Jesuits, he published in 1638, in answer to one of them, his "Religion of Protestants a Safe Way to Salvation," which passed to a second edition in 5 months, was received with general applause, and is still esteemed a model of perspicuous reasoning and one of the ablest defences of the Protestant cause. Maintaining that the Protestant's sole judge is the Bible, and its sole interpreter private judgment, he was opposed not only by the Roman Catholics but by the Puritans, who affirmed that he destroyed faith by resolving it into reason. The appellations of Arian and Socinian were applied to him, and he for a time declined preferment on the ground of scruples as to the subscription of the 39 articles. In 1638 he subscribed to the articles, regarding them as a basis of peace or union and not of belief or assent, and was promoted to the chancellorship of Salisbury, with the prebend of Brixworth annexed. During the civil war he was zealously attached to the royal party, and at the siege of Gloucester in 1643, he directed the making of some engines in imitation of the Roman *testudines* for assaulting the town. He was taken prisoner the next year, died after a short illness, and was buried in the cathedral of Chichester. Dr. Cheynell, one of his severest antagonists, attended and treated him kindly in his last sickness, but appeared at his funeral, and after an admonitory oration hurled a copy of the "Religion of Protestants" into the grave of its author, exclaiming: "Earth to earth, dust to dust." He published in 1644 (2d edition in 1725), "*Chillingworthi Novissima;* or the Sickness, Heresy, Death, and Burial of William Chillingworth," which has been described as "the quintessence of railing, which ought to be kept as the pattern and standard of that sort of writing." The works of Chillingworth have been frequently republished, the earliest complete edition being that of London, 1742, in folio, with a life of the author by Dr. Birch. The constant study of them is recommended by Locke "for attaining the way of right reasoning." Anthony Wood affirms that he had "such extraordinary clear reason, that if the great Turk or devil could be converted, he was able to do it." His character and ability were admired by his contemporaries, and he was reckoned the most acute logician of his age; yet Lord Clarendon says that he "had contracted such an irresolution and habit of doubting, that at last he was confident of nothing." He has therefore been cited by Dugald Stewart as an instance of the ruinous effects of scholastic logic.

CHILLON, Castle of, a fortress in the canton of Vaud, Switzerland, at the E. extremity of the lake of Geneva, on an isolated rock surrounded by deep water, and connected with the mainland by a wooden bridge. It was built by Amadeus IV. of Savoy in 1238, and for many years was a state prison. Bonnivard, prior of St. Victor, was confined here from 1530 to 1536. The place has been rendered famous by Byron's "Prisoner of Chillon." The castle is now used as an arsenal.

CHILMARY, or Chilmaree (Hindoo, *Chalamari*), a beautifully situated but ill-built town in British India, on the Brahmapootra, in the district of Rungpoor, lieutenant-governorship of Bengal, lat. 25° 25′ N., long. 89° 46′ E., 36 m. from the town of Rungpoor. At certain religious and commercial festivals, from 60,000 to 100,000 Hindoos are said to assemble here.

CHILO, or Chilon, one of the 7 sages of Greece, and one of the ephori of Sparta, flourished toward the commencement of the 6th century B. C., and is said to have died of joy on occasion of his son's gaining the prize for boxing at the Olympic games. The institution of the ephoralty has been frequently, but it is believed erroneously, ascribed to this sage. According to Pliny, he caused the words, "Know thyself," to be inscribed in letters of gold on the temple of Delphi. He said that three things were very difficult: to keep a secret, to make the best use of time, and to suffer injuries without murmuring.

CHILOE, a province of Chili, comprising the island of its own name and the smaller islands in the gulf of Ancud which together constitute the archipelago of Chiloe; pop. in 1858, 65,743. It is separated from Chili by a strait not more than one mile in width, and from Patagonia by the gulf of Ancud. It measures 120 m. from N. to S., and about 60 m. at the widest part from W. to E. The western shores are composed of masses of rock, rising abruptly from the sea to a height of from 1,500 to about 3,000 feet. On the E. the coasts are lower. There are numerous inlets which afford good anchorage, but there are few commodious harbors. The interior is mountainous, and covered with magnificent but impenetrable forests, which impart to the country a singularly beautiful appearance. No mines have been discovered in this or any of the adjoining islands, although traces of coal have been found, and many of the streams are strongly impregnated with copper, iron, and other mineral substances. The climate is temperate and generally healthy. Incessant rains prevail in winter, and even in the summer season the air is frequently loaded with moisture. The soil is composed of rich sandy loam, and produces the beech, cypress, laurel, and other trees, wheat, barley, potatoes, apples, and strawberries. Cattle, sheep, and swine are raised in great numbers. Oysters and other shell-fish are found on the shores, and constitute an important part of the food of the inhabitants. A kind of coarse woollen cloth, dyed blue, is the principal local manufacture. Timber, hides, brooms, woollens, and provisions are the chief exports, and about 1,500 vessels find employment in the coasting trade. Chiloe was discovered by the Spaniards in 1558. Castro, founded in 1566, was anciently its capital, but San Carlos is now the chief town and port. The Chiloe archipelago consists of upward of 60 small islands, about 20 of which are inhabited, and several well cultivated. The most prominent of these are Quinchao, Lemuy, Calbuco, and Llaicha. The province is divided into 10 districts, and is governed by an intendant and a provisional assembly, subject to the general government.

CHILTERN HUNDREDS, a small and hilly district, extending through part of Buckinghamshire and Oxfordshire, England, to which a nominal office is attached in the gift of the crown, the person chosen to fill it being called the steward of the Chiltern Hundreds. This office is associated with a parliamentary usage of England. A member of the house of commons cannot directly resign his seat; to accomplish that object indirectly, it is customary for a member wishing to resign to accept a nominal office under the crown, such as the stewardship of the Chiltern Hundreds, and the acceptance of this office at once vacates his seat in parliament, and a new writ is issued.

CHIMÆRA, in Grecian mythology, a three-headed, fire-breathing monster, sprung from Typhon and Echidna, and killed by Bellerophon. The fore part of its body was that of a lion, the hind part that of a dragon, and the middle part that of a goat; while it had 3 heads, each of which resembled that of one of the 3 animals. Works of art have been discovered in Lycia on which the Chimæra is represented, not as a monster of triune conformation, but in the simple individuality of a species of lion which even still exists in that region. The term chimera, applied figuratively to a vain, idle fancy, is derived from this fabled monster.

CHIMARA, Khimara, or Chimari, a mountain range of Albania, called by the ancients *Ceraunii Montes*, the thunder mountains, on account of the frequent thunder storms which occur among them. They terminate in Cape Linguetta, the old name for which, *Acroceraunia*, was sometimes applied to the whole range.

CHIMAY, the name of a little principality in the Belgian province of Hainaut, with a thriving capital of the same name on the river Blanche, in the arrondissement of Charleroi; pop. 3,400. In former times it belonged to the lords of Croy. In 1470 it was made a county by Charles the Bold of Burgundy, and in 1486 a principality by Maximilian of Hapsburg. After passing through various hands, it reverted by inheritance in the beginning of this century to the French family Riquet de Caraman.—The most celebrated member of this family was the princess of Chimay, Jeanne Marie Ignace Thérèse, born in Saragossa about 1775, died in Brussels, Jan. 15, 1835. She was the daughter of Count Cabarrus, minister of finance in Spain. Married at a very early age to M. de Fontenay, a councillor to the parliament of Bordeaux, from whom she was soon divorced, she became interested in the revolutionary movement, but gave umbrage to the government and was arrested. Tallien, on passing through Bordeaux, fell in love with the beautiful prisoner, procured her liberation, and finally married her. On her arrival in Paris, her beauty created a great sensation. She took a deep interest in politics, siding with the moderate republicans. She prevailed upon her husband to engage in a plot for the overthrow of Robespierre, and was thus the promoter of the revolution of Thermidor. From this period, her house became the centre of the most brilliant society of Paris, and she was for years, but especially during the directory, the queen of fashion. In concert with Madame Récamier and other distinguished ladies, she appeared in the Tuileries in a Greek attire, rather more remarkable for its transparency than elegance, and won universal admiration by the classical perfection of her person. Such triumphs were far from being acceptable to her husband, who had still more serious causes of complaint. He left France, first travelling in England, then accompanying Bonaparte to Egypt. On his return to Paris, he was divorced from his wife by mutual consent. In 1805 she took as her third husband Count Caraman, François Joseph Philippe de Riquet (born Sept. 21, 1773, died March 2, 1843), who soon became prince of Chimay, and lived with him on good terms, residing in Paris, Nice, or at his castle of Chimay in Belgium. She kept for many years her rank among the beauties of France, but was never admitted to the court of Napoleon; and although her husband had access to nearly all the courts of Europe, she was excluded from them, even from that of Belgium, where the prince held the office of first chamberlain to Leopold. Her revolutionary reputation had closed to her the doors of the monarchical world. She was not only a handsome, but a most generous, kind, amiable, and witty woman, always ready to serve even her enemies. A lady whom she had saved from death during the revolution, said of her: "If you call Madame Bonaparte our lady of victory, you must call Madame Tallien our lady of good help."—Joseph de Riquet, Count Caraman, the present prince of Chimay, eldest son of the preceding, born Aug. 20, 1808, officiated for many years as Belgian ambassador at the Hague, Frankfort-on-the-Main, and Rome, represented in the Belgian chamber of deputies the district of Thuin, where his estates are situated, and married, Aug. 25, 1830, Emilie de Pellapra. His eldest son, Marie Joseph Guy Henri Philippe, born Oct. 9, 1836, married, June 16, 1857, to Marie de Montesquiou-Fezensac, is heir presumptive of the principality of Chimay. The title of prince is vested in the eldest son alone.

CHIMBORAZO, the most famous peak of the Andes, is situated in lat. 1° 30′ S., long. 79° W. It was for a long time supposed to be not only the highest point on the western continent, but the highest in the world. This distinction it has now lost, as it ranks only as the 6th among the loftiest peaks of the Andes, and falls far below some of the mountains in the Himalaya chain. Its elevation above the sea was ascertained by Humboldt to be 21,440 feet. It is surrounded by high table-lands, above which it rises less than 12,000 feet, so that on a near approach it appears less gigantic than when viewed from a distance. The form of the mountain is that of a truncated cone, and its appearance from the coast of the Pacific is peculiarly grand. Nearly 200 m. distant, it resembles an enormous semi-transparent dome, defined by the deep azure of the sky; dim, yet too decided in outline to be mistaken for a cloud. Its top is covered with perpetual snow. Humboldt and his companions, in 1802, made extraordinary exertions to reach its summit, and arrived within about 2,000 feet of that point, then believed to be the greatest elevation ever attained by man. Here they planted their instruments upon a narrow ledge of porphyritic rock, which projected from the vast field of unfathomed snow. A broad impassable chasm prevented their further advance; beside which, they felt in the extreme all the usual inconveniences of such high situations. They were enveloped in thick fogs, and in an atmosphere of the most piercing cold. They breathed with difficulty, and blood burst from their eyes and lips. One other traveller, J. B. Boussingault, in 1831 ascended still higher, reaching an elevation of 19,689 feet; but the summit of this gigantic mountain still remains unexplored by man.

CHIMES, a set of bells tuned to the modern musical scale, and struck by hammers which are moved either by clock-work or by hand. In the latter case they are commonly termed *carillons*, a name applied by the French in common parlance indiscriminately to the tune played and to the series of bells, whether sounded by machinery or by hand, though the most accurate writers distinguish the latter as *carillons à clavier*. The mechanism for sounding chimes consists of a cylinder from the circumference of which project pegs placed at proper intervals according to the order in which each bell is to be struck. This is made to revolve by clock-work, and the pegs are thus brought into contact with levers operating upon the bell-hammers. Carillons are played by means of an attachment similar to the key-board of a piano-forte; for the larger kinds the keys are of great size, and the performer strikes them not with his fingers but with his fists, which are guarded by leathern coverings. Notwithstanding the great force requisite in playing this colossal instrument, musicians have sometimes acquired marvellous skill in performing on it the most difficult airs. It is often adapted to music in 3 parts, the base being played on pedals and the first and second trebles with the hands. Potthoff, a blind organist and carillon player of Amsterdam, used to execute fugues on it, though every key required a force equal to the weight of 2 lbs. A pleasing application of chimes is made to clocks and watches, by which they ring out the hours, halves, and quarters. When intended to be placed in a small compass, the bells are arranged concentrically one within another. This species of music is supposed to have originated in some of the monastic institutions of Germany, and the first instrument for producing it is said to have been made at Alost, in the Netherlands, in 1487. Among the finest sets of chimes in Europe are those at Copenhagen and Ghent. At Amsterdam there are both carillons and chimes, the former of 3 octaves, with all the semitones complete.

CHIMNEY (Lat. *caminus*, Gr. *καμινος*, a furnace), the flue for conveying off the smoke of fires. Simple as are these contrivances, chimneys do not appear to have been known in ancient times. According to Tomlinson, they were probably in use in England before those of Padua, the earliest record of which carries them back to some period previous to 1368, when Carraro, lord of Padua, introduced them into Rome. But the use of the curfew bell in preceding centuries indicates their absence, when the practice prevailed of thus summoning the people to cover over the fires that burned in pits in the centre of the floor, under an opening in the roof. In Venice they appear to have been common in the 14th century, a number being thrown down, it is recorded, by an earthquake on Jan. 25, 1347. Leland thus speaks of Bolton castle, which he says "was finiched or kynge Richard the 2 dyed:" "One thynge I muche notyd in the hawle of Bolton, how chimeneys were conveyed by tunnells made on the syds of the walls betwyxt the lights in the hawle, and by this means, and by no covers, is the smoke of the harthe in the hawle wonder strangely conveyed." But for centuries afterward they appear to have been known only as luxuries in the houses of the great; and in the time of Queen Elizabeth visitors were occasionally sent to houses thus provided, that they might have the enjoyment of this convenience. Beckmann, in his "History of Inventions," has gathered from ancient sources many curious allusions to what in our translations are called chimneys; but these appear after all to have been nothing better than holes in the roof, through which the smoke found its way out, as from the wigwams of the American Indians. Neither Vitruvius, nor Julius Pollux, an ancient lexicographer, who gives the names of all parts of a house in Greek, nor Grapaldi, who does the same in Latin, makes mention of chimneys. Among the most ancient ruins no traces of them are found, nor have any been discovered in Herculaneum, though charcoal has been met with in some of the apartments. The mode of warming rooms appears to have been to place upon the floor a portable pan or furnace containing live coals. Hence the propriety of the observation of the poet Sosipater, that one qualification of a perfect cook was the art of determining which way the wind blows; and also of the advice of Vitruvius, that there should be only plain cornices in rooms where there are to be fires and lights, as more elaborate ornaments would soon be filled with soot. Anacharsis, the Scythian, speaks of the Greeks keeping the smoke without, and bringing only fire into their houses; and Heliogabalus is said by Lampridius to have burned in the stoves spices and costly perfumes instead of wood. The Persians, who still retain some of the most ancient customs, make their fires, as stated by De la Valle, in a round or square hole in the earth floor of their apartments. An iron vessel fills this hole, and contains the fuel. Over it is placed a low table, covered with a thick quilted cloth, reaching to the floor. By this contrivance the heat is said to be condensed so as to warm the whole apartment; and those who sit upon cushions near the fire may extend their feet under the cover, or leaving their seat they may creep entirely under it. The heat is described as being exceedingly agreeable, and not causing uneasiness to the head, though no provision is made for conveying away the gaseous products of combustion. A pipe for blowing the fire with the mouth is made to project up from the floor.—To such expedients were the most refined nations of antiquity probably reduced in their ignorance of the simple chimney flue; a fact which would seem quite irreconcilable with the progress they had made in many of the arts dependent more or less upon the use of fires, were it not that these were perhaps less essential to them than to the inhabitants of more northern latitudes. The tendency of heated air to ascend must have been almost as familiar to them as that of water to flow down inclined planes, and to us it would seem to require not much more ingenuity to devise pipes for conveying the former away, than to contrive aqueducts which to this day are regarded as extraordinary works of art. It was the every-day need of supplies of pure water, and not of artificial warmth, which alone made the difference. This tendency of warm air to form ascending currents comes from its greater proportional lightness as it is expanded by heat and made to occupy a greater space. Deep mines in cold countries well exemplify the working of this principle. In the winter season the deep shafts are perfect chimneys of ventilation. The air enters the mines through the lowest openings into them, and mixing with the smoke of the candles and of the gunpowder blasts, acquires from these, and from the warmer underground temperature, a greater heat than that of the air above. Expanding in bulk, it floats upward, establishing an ascending current, which is renewed by succeeding portions of air, and which rapidly sweeps off the gaseous impurities of the mine. But as the weather becomes warm, and the air within and without attains the same temperature, no such current is formed, and the smoke, settling in a cloud below, slowly finds its way out by those passages through which at other times the fresh air is wont to flow in. Artificial means of ventilation then become necessary. A fire may be employed to heat the air in the mine, the smoke from it being carried up a smoke flue; or (to avoid the expense of a metallic pipe) the fire is often made at the top of the shaft, and fed with air only through a wooden pipe or canvas bag, and thus a circulation is established, by which the workings are ventilated. Mechanical means are also resorted to of displacing the foul air by a fan blower or other apparatus, exhausting and driving it out, or driving down pure air to circulate among and improve it. The ascensional power of a column of heated air is the difference between its weight and that of an outside column of the same height. It is hence increased by adding to the height of the chimney, as well as by increasing the temperature. But the chimney may be so high, especially when exposed in cold situations, that the heat taken up below may be dispersed before the air reaches the top. In this case increased height adds nothing to the draught, but diminishes it. Short chimneys may be made more effectual by increasing the temperature, and in locomotives this is done by the introduction of a jet of hot steam. Calculations have been made to estimate the ascending force of air in chimneys at any given increase of temperature over the external air; but these are affected by many sources of error, which render the results only approximate. Air, in its flow through confined channels, is subject to similar laws with water or any other fluid conveyed in pipes. Over rough surfaces it is retarded by increased friction, and in small flues it experiences this resistance more than in large ones of the same construction in the inverse proportion of the diameters of the flues. Then again, though it is ascertained that the expansion of air between the boiling and freezing points is .3665 of its bulk at the lower temperature, it is not certain that this rate continues to much higher degrees. And lastly, in order to apply these calculations, it is necessary to know the mean temperature of the column of air in a chimney, and this cannot be determined with accuracy. It may be approximated by finding the degree of heat a little above the lower entrance into the flue, and that at the top, and taking half of their sum. Montgolfier, the inventor of balloons, first gave attention to this subject, and proposed the following method of determining the force of the draught, or the velocity of the current, which is still considered as simple and accurate as the case admits of. It is the same velocity which a falling body would acquire in passing the distance equal to the difference in height between two equal columns of air at the different temperatures. As the velocity of a heavy falling body is ascertained at any period of its descent by multiplying the square root of the number of feet it has fallen by 8, which gives its rate per second of time, we have the data for applying to the calculations for determining the velocity of the current. Suppose the height of the chimney to be 70 feet, and the difference of temperature of the two columns to be 30°, we have the expansion of the heated column = 70×.0661 (this decimal representing $\frac{1}{6}$ of the expansion due to a difference of 180° of temperature). The difference in the height of the two columns is then 4.627 feet, and the square root of this (2.15), being multiplied by 8, gives 17.2 feet per second as the velocity of the draught. —In actual use chimneys are far from operating with the regularity which any attempt at calculating their effect would seem to imply. From numerous causes the smoke, which should go up, comes down with a mysterious pertinacity, and the chimney, instead of adding to the domestic comfort, proves as troublesome as if some capricious spirit had taken possession of it, and controlled its operations. None but experts mysteriously skilled are capable of exorcising this spirit, or prescribing for the ills of the chimney. They form a class of chimney doctors, with whom quackery is probably more prevalent than with the other classes which bear this professional name. And indeed, so little are the principles of chimneys understood, that it is a rare thing to find builders who can be sure that the chimneys they construct will not smoke; and none certainly have ever been known to admit beforehand that theirs would. The causes for this evil may be imperfections in the flue, as too contracted dimensions, or too rough an inner surface, or openings into it which admit cold air and chill it, as may also occur from too large an opening at the fireplace; or, presenting too large and exposed an aperture at the top, the wind may strike down into it, and throw back the column of smoke. This is particularly likely to occur when the top of the chimney is below the level of some neighboring house, hill, or high trees, from which the wind may be reflected down into the chimney, or over which it may fall, and thus beat down the smoke. An inadequate admission of air into the room in which is the fireplace will cause a chimney to smoke, a circulating current being thus as effectually prevented as if the flue itself were in great part obstructed. The opening of a door or window often shows the cause of this trouble by at once removing it. When two chimney flues come down into one room, or into two rooms which connect by an open passage, the burning of a fire in one flue may establish an upward current, which is supplied with air drawn down the other. Any attempts to make the second chimney draw could only succeed by closing the connection between them, or supplying the first with the air it requires from some other source. When a chimney smokes in consequence of the wind beating down, the remedy is to increase the height, or else to draw in the flue at the top. The effect of the latter change is to admit a smaller quantity of air, and this is dispersed through the large body in the flue without being felt at the base. But if this should not prove effectual, a similar contraction in the throat of the fireplace also may accomplish the desired end. The late Mr. A. J. Downing, who gave particular attention to all subjects connected with house architecture, speaks of this contraction as the principle of building chimneys to draw well. The back of the fireplace, in his plan, is made sloping forward as it rises from the hearth. When nearly as high as the breast of the fireplace (that is, the top of the open space in front), the back is built vertically for about a foot, passing thus at least 6 inches higher than the bottom of the breast. It then makes a square jog back to the posterior wall of the flue. This flat shoulder is deemed essential, chimneys having been made to smoke when the right angle was filled in with mortar. The under edge of the mantel or breast next the flue should always be rounded off, the effect of this being to cause the air passing into the flue from the room to mix gently with the smoke without causing any sudden disturbance. For chimneys of moderate size or depth at the throat, the distance from the mantel to the back wall should be about 4 inches, and the length of the opening such that, multiplied by its depth, the area will be equal to that of the flue above. For the top of the chimney in very windy or exposed situations, the rule is to contract the flue to a third less than its area below. Ordinarily the drawing in of a 12 inch square flue to 10 inches is sufficient, and where there is no likelihood of downward currents the contraction at the throat may answer. The worst chimneys usually draw well when a stove is substituted for the fireplace, and the pipe is led into the chimney. The effect is that of greatly contracting the flue. The contraction at the top is frequently made by adding an ornamental piece called a chimney top, which also improves the draught by increasing the height. But a great variety of these have been contrived with a view more to usefulness than to ornament, and being made of sheet iron, with grotesque shapes designed by the arrangement of the slopes of their sides to turn the wind away from the flue, their effect upon the most prominent points of our dwellings is by no means pleasing to the eye, while their endless diversity implies that the real cure of smoky chimneys is not yet generally understood.—Tall chimneys are built to convey away the noxious fumes from chemical and manufacturing establishments, and relieve the neighborhood of the nuisance these would otherwise occasion. Their long and frequently graceful shafts would in ancient times have entitled these structures to be regarded as monuments worthy of receiving the name of some distinguished conqueror; but their present homely use really serves to conceal from most of us the beauties they possess. They are built up from a solid base with side flues leading into the central cavity. The size of this cavity should, as in the chimneys of dwelling houses, be of rather larger area than the sum of that of the flues which lead into it. In large stacks it varies from 3 feet in diameter, or 3 feet square, to 6 feet, contracting gradually toward the top. They are constructed with a brick lining, so laid as to leave an air space between it and the outer wall, the effect of this being to check the rapid dispersion of the warmth of the vapors. A chimney of this kind has been erected at Manchester, England, 415 feet high, 25 feet square at the base, and 9 feet at the top. It required to build it 4,000,000 bricks. At the Thomas iron works, on the Lehigh river in Pennsylvania, are cylindrical chimneys of a thin boiler-plate iron casing, lined with fire brick; the casing being 7 feet in diameter, and the fire brick a foot long, made and bevelled to fit the circle, the internal diameter is 5 feet. These chimneys, for their capacity, are light, substantial, and elegant; but they are not built with reference to retaining the heat of the vapors, which is here no object. The iron casing may serve as a most efficient lightning conductor if connected with the ground by other conductors.

CHIMPANZEE (*simia troglodytes*, Blum., or *troglodytes niger*, Geoff.), the form of the four-handed animals which comes the nearest to man; so much so, indeed, that Linnæus places it under the genus *homo*, with the epithet *troglodytes* to distinguish it from man. Bory de St. Vincent has struggled hard to retain the chimpanzee in the same genus as man, but the question is entirely set at rest by Cuvier, Blumenbach, and Owen, who have proved many perfect and permanent osteological distinctions; and, among others, especially the totally different conformation of the heel in the human being, which shows that the posterior hand of the chimpanzee could never, by any length of time or process of modification, by use or development, be converted into the human foot. From the orang outang the chimpanzee differs, in having the cranium broader in proportion to the face; in 8 more minute distinctions as to the characteristics of the skull; in the smaller size of the incisor and canine teeth, and inferior development of the jaws, giving it a more human and less beast-like head; in the difference of size in the vertebræ, the cervical being smaller and the lumbar larger in the chimpanzee; in the possession of additional dorsal vertebræ, corresponding to a second pair of ribs; in the comparative shortness of the forearm and hand; in the greater proportional length of the femur and tibia, and the less proportional length of the foot; and in many other points in the structure of the chest, loins, hands, nail, and fingers, extending in all to 28 points of difference in the osteological structure of the animals; of which 23 points, 20 in the chimpanzee have a greater similarity than in the orang to the same points in the human being, and 3 in the orang have a greater similarity to those of man than the same in the chimpanzee. Owen well observes, that from these considerations, and especially from the conformation of the jaws and dental system, which in the orang are scarcely inferior to those of the lion, and greatly resemble those of the fiercer and more terrible carnivora, the chimpanzee ought to rank above the orang, not below it, as it does in the *Règne animal* of Cuvier. Linnæus, as has been observed, gave to the chimpanzee that superiority, but erred in placing it too high, and including it in the same genus with man. The importance of these distinctions is not easily understood or appreciated from the reading any, even the most lucid description, while they are seen in a moment by a glance at the skeletons of the animals, or at drawings of them. The chimpanzees are natives of Africa only, and are found principally on the Congo and Guinea coasts, and in Gaboon. The length of the arms is very great, reaching below the knees by the whole extent of the fingers. The legs have a sort of calf, but it differs from that of the human being in that it continues of equal thickness nearly to the heel. The hand differs from that of the human being in having the thumb much the smallest of the fingers; the foot is properly a hand, appended to the tarsus, with a thumb extremely long, powerful, and capable of great extension. The chimpanzee walks more frequently erect on its feet than the other species, but stands with the feet much wider apart than man, and goes with the knees much more bent. It is a hideous and fearful caricature of the human race, when alive; its structural differences not being nearly so distinguishable when the skeleton is clothed with the muscular flesh and covered with the hairy skin, as when it is seen denuded.—Beside the species described of this formidable animal, the *troglodytes niger*, or black chimpanzee, several specimens of which have been exhibited alive in England, at the zoological gardens and elsewhere, there is the *troglodytes gorilla*, great or gorilla chimpanzee, which, so far as is known, has never been seen by a white man, nor has any perfect skeleton been obtained, although portions sufficient to establish the animal as distinct from the black species have been submitted to scientific examination, and prove it to differ from any other of the quadrumans. The *troglodytes gorilla* is also a native of the Gaboon country.—The habits of the chimpanzees are very imperfectly known; what is collected concerning them being little more than the reports of the negroes, who, always addicted to the marvellous, are further possessed by a dread of these animals, at once physical and superstitious. Whenever they succeed in killing one of these, their terrific enemies, they are known to a "fetish" of the cranium. Cuvier states 'the chimpanzees live in troops, construct [illegible] es huts of leaves, arm themselves with [illegible] and stones, and employ these weapons [illegible] re man and the elephant from their dwell- [illegible] He also repeats the story of their pur- [illegible] the negresses, and carrying them off into woods. This story is still credited in the [illegible] y where they are found. Speaking of [illegible] Payne, Dr. Traill, in his interesting paper [illegible] "Wernerian Transactions," says: "The [illegible] of Gaboon informed him that this species [illegible] the height of 5 or 6 feet; that it is a [illegible] le antagonist to the elephant; and that [illegible] of them will not scruple to attack the [illegible] other beasts of prey with clubs [illegible] It is dangerous for solitary indi- [illegible] ravel through the woods haunted [illegible] and instances were related to [illegible] negro girls being carried off by [illegible], who have sometimes escaped to society after having been for years de- [illegible] by their ravishers in a frightful captivity. [illegible] reports confirm the narratives of the early [illegible] who have often been suspected of exag- [illegible] and similar facts have been recently [illegible] circumstantially, by gentlemen who [illegible] western Africa." There being two [illegible] the chimpanzee ascertained to [illegible] of which has never been [illegible] pe, it is probable that the habits [illegible] two have been confounded. No reliance [illegible] o be placed on the accounts of the [illegible] ility, and aptitude at acquiring [illegible], of these animals, when in cap- [illegible] Such anecdotes always relate to ani- [illegible] taken extremely young, and rendered ti- [illegible] and docile by the handling of the sailors, [illegible] ke pets of them. As they become old become sullen, savage, and ferocious, and [illegible] is reason to believe that there is no ani- more brutally and irreclaimably vicious [illegible] one of the old males of any of these large anthropomorphous apes, whether they be orangs, gibbons, or chimpanzees.

CHINA (Chinese, *Tsin*, *Tai-tsing*). I. A vast empire in eastern Asia, comprising, beside China proper, the vassal states and territories of Mantchooria, Mongolia, Soongaria and Little Bokhara, Thibet, and the territory of the Tartars of Koko-nor. Merely nominal dependencies, not included in the empire, are the peninsula of Corea, the kingdoms of Anam, Siam, Burmah, Nepaul, and Bootan, and the Loo Choo islands. Extending over 74¼ degrees of longitude (from the western bend of the Bolor Tagh in long. 70° E. to Cape Patience on the island of Saghalien, long. 144° 30′ E.), and 38 degrees of latitude (from the bay of Yulin, island of Hai-nan, in lat. 18° 10′ N., to the Russian frontier, lat. 56° 10′ N.), this empire covers an area of 5,300,000 sq. m. according to McCulloch, or 5,426,000 according to Balbi, or 5,859,564 according to Berghaus; but from this some 300,000 sq. m. must be deducted in consequence of the cession by treaty to Russia of the Amoor country (May, 1858). The external frontier of the whole empire is 12,550 m. long; the coast line, from the mouth of the Amoor to Hai-nan, 8,350 m. This colossal empire comprises nearly $\frac{1}{10}$ of the habitable part of the globe, and, next to Russia, is the largest which has existed on earth, its area being double that of the United States. Its population may be stated approximatively at 500,000,000. The boundaries are: N. E. the Amoor river; N. the Great and Little Altai mountains (Siberia); W. the Kirgheez country and Tartary; S. W. Hindostan; S. Nepaul, Bootan, Burmah, Anam, or Cochin China; E. the Pacific ocean (China sea, Eastern sea, Yellow sea, sea of Japan). The different states and provinces, beside China proper, will be treated of in separate articles. II. CHINA PROPER, by its inhabitants called Chung-kue (middle kingdom, a term nearly equivalent to the *orbis terrarum* of ancient Rome), or Chung-hoa (central flower), Tshu-ku (centre of the earth), Thian-shan (celestial empire); by the Buddhists, Shin-ton; by the Mohammedans, Thung-to; by the Russians and the inhabitants of northern Asia, Ketan, Kitaï, or Katai (whence the ancient name Cathay); by the Anamese, Sina; by the Persians, Chin; by the Thibetans, Yulbu. It extends from long. 96° to 123° E., and from lat. 18° to 43° N., and is bounded N. E. and N. by Mantchooria and Mongolia, from which it is separated by the great wall; E. by the ocean; S. by Cochin China, or Anam, and Burmah; W. by Thibet and Chinese Tartary. Its area is estimated by Sir George Staunton, at 1,500,000 sq. m., inclusive of the province of Leao-tong, which lies beyond the great wall, and 1,297,999 sq. m. exclusive of it; at 1,348,870 sq. m. by McCulloch; at 1,482,091 by Malte Brun; and at 2,000,000 (if the full area of the provinces of Kan-su and Chi-li is included) by Wells Williams. Thus China proper is about 7 times the size of France, or nearly half as large as all Europe, which is 3,650,000 sq. m. Its population was in 1812, 362,447,183, according to the general statistics of the empire, afterward estimated by Morrison at 367,659,897, in 1852 at 396,000,000; in 1858 estimated at 360,279,897 only by G. W. Cooke, but at 410,000,000 by the writer of the article on China in Pierer's *Universal Lexikon*. Although founded upon the official census tables of China, these various statements leave much room for doubt as to their accuracy; yet that objection which is based upon the improbability of so large a population finding room on the area of the 18 provinces has no great force; for even if the highest of the foregoing estimates be accurate, the average population to the sq. m. would be a little over 300, while that of Belgium is 321, of Lombardy 260, of Ireland 249, of England and Wales 241, of France 223. It is true that the average population in some provinces of China greatly exceeds the general average. Thus, if Mr. Cooke's estimate is admitted as more nearly correct than the others, the general average would be 268 to the sq. m., while the average in the province of Kiang-su is 850, in Ngan-hoei 705, in Che-kiang 671, in Chi-li 475, in Shan-tung 444, in Quang-tung 241, in Quang-si 93, in Koei-chu 82, and in Yunnan 51.—The empire is divided into 18 provinces, viz.:

Provinces.	Chief cities.	Area in sq. m. according to Sir George Staunton.	Population according to Morrison.	Population according to Pierer's Lexikon.
Chi-li......	Pe-king.....	58,949	27,990,874	30,000,000
Kiang-su...	Nan-king	92,961	37,843,501	40,000,000
Ngan-hoei..	Ngan-king		34,168,095	36,000,000
Shan-si.....	Tai-yuen....	55,268	14,004,210	15,000,000
Shan-tung..	Tsi-nan.....	65,104	28,958,765	31,000,000
Ho-nan.....	Kai-fung....	69,104	23,037,171	24,000,000
Shen-si.....	Si-ngan...	154,008	10,207,256	15,000,000
Kan-su.....	Lan-chu..		15,193,125	16,000,000
Che-kiang..	Hang-chau..	39,150	26,256,784	28,000,000
Kiang-si....	Nan-chang..	72,176	30,426,999	32,000,000
Hu-pe	Wu-chang	144,770	27,370,098	28,000,000
Hu-nan.....	Chang-sha		18,652,507	20,000,000
Se-chuen...	Ching-tu....	166,800	21,435,678	22,000,000
Fo-kien	Fu-chu	53,480	14,777,410	18,000,000
Quang-tung.	Canton	79,456	19,174,030	23,000,000
Quang-si ...	Kwei-lin....	78,250	7,313,895	8,000,000
Yun-nan ...	Yun-nan	107,969	5,561,320	5,500,000
Koei-chu ...	Kwei-yang..	64,554	5,288,219	5,500,000
Total		1,297,999	367,659,897	397,000,000

NOTE.—The discrepancy between the above total from Pierer's *Lexikon*, and the general estimate given in the same work, is not accounted for.

About ¼ of the empire (415,000 sq. m. according to Berghaus, 480,000 sq. m. according to Ritter) is a level, fertile, highly cultivated country, while ¾ are studded with mountains, which, rising higher and higher toward the interior, ultimately tower up in the gigantic glaciers of the Yun-ling. The alpine mountains of the Yun-ling, a prolongation of the Himalaya, commence in the S. W. corner between the gulf of Tonquin and the Si-kiang; thence they send their main chain (Nan-ling) eastward, where, dividing the provinces of Koei-chu and Quang-si, it forms the all but inaccessible country of the aboriginal Miao-tse. Again, they run along the N. frontier of Quang-tung (Mei-ling) to long. 116° E., thence in a N. N. E. direction, separating Kiang-si from Fo-kien, and terminating in Che-kiang on the sea, opposite Chu-san. The Pe-ling run along lat. 34° N. from Thibet across Shen-si into Ho-nan, dividing the basins of the Hoang-ho and Yang-tse-kiang. Between the great bend of the Hoang-ho and the imperial canal the parallel chains of Wa-shan, Ki-ling, Ma-ling, Lu-yen-shan, and Gar-gu-shan run from N. E. to S. W. West of the Hoang-ho the King-hong-shan and the Chag-an-to-la-chai run in the same direction. A great mountain system (Ki-lian-shan, A-la-shan, Shan-gar-jan), the highest peaks of which rise 15,000 feet above the level of the ocean, divides Mongolia from China. An insulated chain of naked granite hills (Tai-shan) traverses the province of Shan-tung. Most of these mountains rest upon a basis of granite, but the surface generally belongs to the lime and sandstone formation.—The rivers of China, says Mr. Williams, are her glory, and no country can compare with her for natural facilities of inland navigation, and the people themselves consider that portion of geography relating to their rivers as the most interesting. There are 2 large river systems—that of the Hoang-ho, or Yellow river, and of the Yang-tse-kiang, or Blue river. The Hoang-ho rises in lat. 35½° N., and long. 96° E. Its mouth is 1,290 m. from its source, but by numerous windings the course is prolonged to nearly double that distance. The area of its basin is estimated at 700,000 sq. m. It is but little used for navigation, because of its impetuous current. But few important tributaries empty into the Yellow river (Wei and Lu in Shen-si, Yuei-ho, Hoei-ho, Fuen-ho, &c.). The Yang-tse-kiang (son of the ocean) is far more tranquil and useful than its rival. It is formed by the confluence of the Kin-sha-kiang (Gold-sand river) and Ya-long-kiang (White river). This majestic stream, with a length of 2,200 miles (or nearly 3,000 according to Mr. Williams), and a breadth, above Nan-king, of 3 to 4 miles, is the main artery of the empire. Tens of thousands of boats and barges continually crowd it. Its principal tributaries are the Kan-kiang, which empties through the Po-yang lake, the Siang and Yuen, on the S.; the Han-kiang and Kia-ling, on the N. The country lying between the Yang-tse-kiang and the Hoang-ho is by its fertility, general prosperity, and the high state of education of its inhabitants, the most important and influential part of the empire. The Yang-tse-kiang is navigable for the largest ships more than 200 m. from its mouth, and for boats more than 1,700 m. The tides are perceptible 400 m. to Kiu-kiang. The whole basin of the river, estimated at 750,000 sq. m., is accessible by the subsidiary streams. Independent of these 2 great river systems, there are those of the Pei-ho or White river in the N., which rises in Tartary, passes the capital Pe-king, receives the Yu-ho, and falls into the Yellow sea; and of the Chu-kiang, which, rising E. of Yunnan, drains, with its tributaries, a region of nearly 200,000 sq. m., and falls into the China sea near Canton, after a course of 700 m. The lakes of China are comparatively few and small. The largest are the Po-yang in Kiang-si, 90 m. long and about 20 in breadth, surrounded by lofty granite mountains, and enclosing many beautiful and populous islets; the Tun-ting in Hu-nan, 300 m. in circumference, both connected with the Yang-tse-kiang; the great lake near Su-chau-fu, the Tai-hu, and the Hong-tse, the only lake of any size connected with the Hoang-ho.—From Hai-nan to the mouth of the Yang-tse-kiang the coast of China is lined with islands and rocky islets; from that point N. to Leao-tong the shores are low and the coast rendered dangerous to vessels by shoals. There are but few good harbors between the mouths of the Yang-tse-kiang and the Hoang-ho. S. of Kitto point, near Ning-po, as far down as Hong Kong, numerous small bays afford a safe refuge for vessels, but there also the aspect of the shore, consisting of barren clay-colored

headlands, is uninviting in the ex-
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ature is lower than under the same
Europe, the changes more sudden, the extremes greater. In these respects the climate of China resembles that of the eastern portion of the United States. Altogether it is not unwholesome, except in the river bottoms and low country. N. of lat. 35° the winter season lasts from Nov. to March; frosts, falls of snow, and fogs are frequent; the mean winter temperature is 25° F., the extreme 6° below zero. The spring season is short, summer hot (up to 84° F.), with copious falls of rain. Between lat. 35° and 25° the climate is mild and steady, the mean temperature of the year being 61° F., the extreme of summer heat 108°; 2 dry seasons and 2 rainy seasons succeed each other in regular order. S. of lat. 25° the climate bears a tropical character, the rainy season lasting from April to Oct., the dry season from Oct. to April. Terrible storms (typhoons) prevail in the months of June and July. Earthquakes also are not uncommon, and within the last century some of them have destroyed hundreds of thousands of people. The mean heat of Canton is 70⅓° F., the average annual fall of rain 70 inches; in the single month of March the fall of rain has exceeded 20 inches. Snow has fallen at Canton but once within the last quarter of a century (Feb. 1836).—As to the amount of precious metals produced in China, few accurate data can be given. Gold is obtained almost exclusively from the sand of the rivers in Yun-nan and Se-chuen. It is wrought into ornaments, not used as a coin. The production of silver must be considerable, though we have no accurate estimates of the amount. Iron and copper abound in most of the mountains in the N. provinces; the excellent white copper (*pe-tung*) is mined in Yun-nan, also zinc, mercury, and silver. Quicksilver in the form of cinnabar abounds in Shen-si. Extensive lead mines are worked near the source of the Si-kiang, but the cost of the article is greater than the price at which it can be imported from the United States. Of precious stones, the ruby, diamond, amethyst, garnet, opal, and agate are known among the Chinese. Malachite is common. The *yu*, a species of prehnite or nephrite, is highly valued. In the chain of granite hills in Quang-tung, Fo-kien, and Che-kiang, lapis lazuli (still used for the preparation of ultramarine), porphyry, and jasper are found; on the borders of Kiang-nan and Che-kiang, great deposits of porcelain clay. Crystallized gypsum is abundant; it is not used for manure, but for industrial purposes. Vast deposits of anthracite and bituminous coal are mined in the most primitive manner, solely by manual labor, in the mountains of Shen-si and Chi-li. It is desulphurized by pounding it in water, and dried in the form of cakes. Salt is obtained by evaporating sea-water. Sulphur, graphite, and meerschaum are mined in considerable quantities. Granite, in the cutting of which the Chinese excel, is the stone they prefer for ornamental architecture. The marble is of poor quality, unsusceptible of polish, and is used only for floors. There are many hot

and mineral springs in Shen-si and Se-chuen; in the latter province there are also "fire wells" (*ho-tsing*) or gaseous springs.—Among the vegetable productions of China, the tea plant (*tcha*) ranks first in importance, the domestic consumption being at least 1,800,000,000 lbs.; next rice, the principal article of food for all classes. All kinds of grain and fruit which are cultivated in Europe and North America, common and sweet potatoes, grapes, cotton, sugar cane, tobacco, rhubarb, indigo, hemp, linseed, as well as spices, camphor, ginseng, the varnish tree (*rhus vernix*), the tallow tree (*Stillingia sebifera*), are grown in China. The mango, pineapple, cashew, betel, and cocoanut are native fruits. Pears, peaches, plums, and apricots are inferior in flavor and size to those cultivated in the West. The *leguminosæ* afford many excellent vegetables and valuable products (indigo, soya, &c.). Peculiar to China are *dimocarpus litchi*, *dimocarpus longan*, *Cookia punctata*, and *pe-tsai*, a kind of white cabbage. The sacred bean of the Egyptians (*nelumbium speciosum*) is extensively cultivated as an article of food. So are several species of *aroideæ*, also the *sagittaria Sinensis*, a kind of arrow-root. The plantain fruit does not enter into the consumption of the Chinese as largely as into that of the inhabitants of South America. Ginger is cultivated through all the interior. The *chulan* plant (*chloranthus inconspicuus*) furnishes the flower which is used to scent some sorts of tea. A kind of grass (*coir lachryma*) cultivated in the S. is woven into floor matting. A species of *andropogon* and one of *arundo* are used by the poor for fuel. The bamboo is cultivated about villages for its shade and beauty, and is applied to such a vast variety of purposes that it may well be called the national plant of China. The tender shoots are used for food; the roots as a material for carved work; the culms as poles, rods, sticks, canes, joists, ribs of sails, shafts of spears, tubes of aqueducts; the leaves as covering for persons and dwellings, and for manure; the shavings for mattress stuffings. An oleaginous kind of beet is cultivated, from the root of which the India ink is manufactured. Sea-weed is collected on the coast to a great extent, and used as well for industrial purposes (glues and varnishes) as for food. Large trees and timber are scarce. Oak, black walnut, camphor trees, cedar, cypress, soap, and varnish trees grow in the mountainous districts. Rosewood, sandalwood, and ebony are not unfrequent. The willow is a favorite plant in all parts of China. The chestnut, walnut, and hazelnut are all natives of China. The mulberry tree is extensively cultivated for its leaves, the palm tree for the sago and leaves (fans), the *kuan-lan* for its pith, which supplies an edible flour.—Wild animals have long since disappeared from the densely settled provinces of China, and are now to be found only in the remote mountains. There are elephants, rhinoceroses, tapirs, wild boars, bears, tigers, leopards, and panthers, in the S.; monkeys of a very large species (the gibbon), in the S. W.; musk deer, wolves, lynxes, gray buffaloes, boars, gazelles, antelopes, in the W.; squirrels, ant-eaters, sables, martens, porcupines, hedge-hogs, marmots, weasels, in various parts of the country. Domestic animals are not kept so generally as in Europe or America, the Chinese disliking meat (and dairy products) for food, except pork. The hog and dog are the most common domestic animals. Horned cattle are kept only for draught, and are of small breed (sometimes not larger than an ass). The horses are also small; jackasses and mules are preferred to them. Large-tailed sheep are imported from Mongolia. The goat is common in the northern provinces. The 2-humped camel is used to some extent for the carrying of loads in the northernmost portion of the empire, but is rarely seen S. of Pe-king. It is employed in war, and trained to carry small swivels on its back. Some splendid gallinaceous birds are indigenous to China: the gold and silver pheasant, Reeves's pheasant, medallion pheasant. There are found, beside, the peacock, flamingo, pelican, albatross, parrot, cassowary, bird of paradise (on the island of Formosa), crane, heron, stork, curlew, cormorant, thrush, red-billed magpie, swan, grebe, geese, ducks (*yuen-yang* or mandarin duck), quails and snipe. Crocodiles are not noticed in China, but small lizards and serpents abound. The common frog is caught in great numbers for food, as also are tortoises and turtles. Beside all kinds of fish known in northern America, such as sturgeon, mullet, carp, trout, perch, pike, eel, there are a great many peculiar to China, as the *bynni* carp, (*polynemus tetradactylus*), the *tsang yü* (*stromateus argenteus*), the *sho-kia-yeu* (*tetrodon*). The goldfish (brought to Europe in 1611) is also a native of China. The fins of the shark, torpedoes, rays, and gudgeons, are eaten by the Chinese; they, in fact, eat nearly every living thing found in the water. Even the *thai-seng* (*medusa*), a kind of blubber, is used as an article of food by the common people. The artificial rearing of fish, as also the artificial hatching of eggs, has been in use among the Chinese from time immemorial. Oysters of a good quality are common on the coast. Of insects, the silkworm and the honey-bee are the most important and useful, the grasshopper the most deleterious, the centipede the most troublesome.—Of the aborigines of China only a few remnants are found (Miao-tse, or Lo-lo) in the southern mountains and the province of Fo-kien. The present inhabitants migrated into the country from the N. W. The Chinese, or sons of Han, as they call themselves, are entirely different from the Caucasian race, and stand in near relation to the Mongolian. Their stature is low, rarely over 5 feet, but well built and symmetrical; face round; eyes small, far apart, invariably black and apparently oblique, with bare lids, but thick brows; cheek bones high; nose small, and nearly even with the face at the root; forehead low; lips thicker than among Europeans, but not at all approaching those of the negro; hair straight

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they are swarthy, but not
Portuguese. Altogether
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unimposing, not to say ri-
or rather obesity, is con-
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little opportunity to become thor-
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of the largest seaports can-
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ul in trade, corrupt, wily,
, cowardly, libidinous, and
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classes of Chinese society
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ed (such as the compass, porcelain, gunpowder, paper, printing), and were known and practised many centuries earlier; who probably amount to more than 300,000,000, united in one system of manners, letters, and policy; whose cities and capitals rival in numbers the greatest metropolises of any age; who have not only covered the earth but the waters with towns and streets; such a nation must occupy a conspicuous place in the history of mankind, and the study of their character and condition commends itself to every well-wisher of his race." The difficulties with which this study is beset are shown by the great diversity of opinion among those recent travellers who have ventured beyond the immediate vicinity of the large seaports, and improved every opportunity to get an insight into the peculiarities of the social system and national character of the Chinese. Mr. G. Wingrove Cooke, while disclaiming all intention of giving strict definitions, seems to find the key to the glaring inconsistencies of a Chinaman's mind in his utter want of deep religious and moral feeling, his disbelief in the immortality of the human soul, and his total denial of all relations between man and the creative spirit of the universe. It is the preponderance of cold reasoning over warm human sentiment, of calculation over feeling, of the head over the heart, which, according to this theory, should account for many peculiarities of Chinese character.—The form of government is the monarchical, but not despotical, since the emperor is bound by ancient laws and customs, and could scarcely without danger, if he would, disregard the advice or remonstrances of his ministers or the boards of administration. The official title of the emperor is *Hoang-ti* (sublime ruler); his real name is never used while he lives, but the period of his reign has a special name expressive of its character and tendencies. The emperor designates himself by the terms of *Kua-jin*, the little man, and *Kua-kiun*, the little prince. His throne is called "the dragon's throne." Like all oriental princes, his person is venerated in the most abject manner. It is a capital crime not to kneel down at the sight of the emperor's sign manual. Whoever approaches him must do so by literally creeping in the dust. He never appears in public unless preceded by 2,000 constables and with an immense body-guard. His courtiers and chamberlains are for the most part eunuchs, of whom about 5,000 are connected with the palace. He has one legitimate wife (*Hoang-hoi*, empress), 2 wives of an inferior rank (*Fu-shin*, queens), and a great number of concubines; but only the empress wields any political influence. The emperor makes choice of his successor from among the sons of his 3 wives, but the selection remains a secret until his death, lest the heir to the throne should be spoiled by flattery. The daughters are married to Mongolian or Mantchoo princes. Every succeeding generation of the imperial offspring stands one grade lower in the ranks of nobility, until, at the 7th re-

move, they belong to the people at large. A prince of the highest rank receives an annual salary of about $18,300, and has a retinue of 360 servants; one of the lowest rank only $4 a month and rations. Only the highest classes of princes are obliged to live at court. Beside this nobility of birth, there is a personal dignity generally connected with official rank, to which every one has access irrespective of birth. The 5 ancient degrees of dignity are *kung*, *han*, *pe*, *tse*, and *nan*, sometimes rendered duke, count, viscount, baron, and baronet. The civil mandarins, about 15,000 in number, are divided into 2 classes, from the first of which (*ko-lao*) the ministers of state are selected, while the second (*ta-hia-su*) furnishes governors-general, governors, presidents, &c. The mark of official nobility is the peacock's feather, 3 for the 1st class and 1 for the 2d class. The mere title of a mandarin (or rather *kuan*, mandarin being a Portuguese equivalent) is also sold to ambitious individuals, in the same manner as meaningless official titles, such as aulic councillor, secret councillor, &c., in some German states. The military mandarins number about 20,000. They are divided into 5 classes, and rank with the civil mandarins. Their mark of distinction is the button on the top of their cap, a ruby with the 4 higher classes, a sapphire with the 5th. Their uniform of state consists of a gaudily embroidered satin garment, over which a loose dress of blue crape is worn.—The administration of the imperial government is rather complicated. A cabinet (*nui-kao*), consisting of 4 chief chancellors, 2 assistants, and the most eminent scholars, with 500 clerks, forms the head of the government; it revises the laws, draws the decrees, concludes treaties, edits the official annals of the empire (*King-pao*, *i. e.*, court transcripts, usually called the "Peking Gazette," being extracts from the papers decided upon or examined by the emperor, including his own orders and rescripts); in short, has the general superintendence and legislative regulation of the country. The emperor himself takes a prominent part in the labors of this board. Of late a portion of its powers has been vested in a cabinet council (*kiun-ki-chu*), which corresponds to the ministry of western nations. Its members are selected by the emperor from the members of his family and the functionaries of the highest rank. The duties of these supreme councils are general, comprising matters relating to all departments of the government. The principal executive bodies under them are the 6 boards (*lu-pu*), viz.: 1, board of civil service (*lei-pu*); 2, board of revenue (*hu-pu*); 3, board of rites (*li-pu*), or imperial household, court matters, and diplomacy; 4, board of war (*ping-pu*); 5, board of justice (*hing-pu*), performing also the functions of a supreme court of appeals (*ta-li-se*); 6, board of public works (*kung-pu*). Each department has 2 presidents, 4 vice-presidents (one half Chinese, the other Mantchoo), and 3 subordinate grades of officers (directors, under-secretaries, and controllers), beside a great number of clerks; but no board is entirely independent in its acts of the others. An institution peculiar to China is the censorate or board of control (*tu-cha-yuen*, *i. e.*, all-examining court), whose duty it is to examine all official acts of the ministry and cabinet, to institute inquiries, raise objections to such measures as they deem detrimental to the best interests of the country, and even to stop them entirely. They are bound to give a hearing to every subject who has cause to complain of any act of government. The office, in its practical working, is somewhat similar to that of the tribunes of the people in ancient Rome, and may be considered as a substitute for popular representation. At least, the privilege of reproving even the personal doings of the emperor has often been exercised by the censors with more candor and plainness than high functionaries in European monarchies would be capable of. The administration of the vassal states and foreign affairs is separate from that of the empire proper. It is intrusted to the *li-fan-yuen*, usually called the colonial office. The provinces are divided into districts (*fu*), each containing an average population of 2,000,000; the districts into departments (*chei-'u*), the departments into circles (*hien*). The larger provinces are administered each by a governor-general (*tsung-tu*) or viceroy, while of the lesser ones there is but one viceroy for 2 or 3. Special imperial commissioners (*kin-chai*) are constantly sent to all parts of the empire to take a general surveillance. Governors-general are appointed for 3 years; their powers are limited by those of a provincial cabinet, consisting of the lieutenant-governor, the military governor, the provincial treasurer, and the chief justice of the province. The powers of the governors are delegated to *tao-tai* (deputy governors) in the districts. At the head of the departments and circles stand executive officers corresponding to the French prefects and subprefects respectively. According to the "Red Book" there are 8 governors-general, 15 lieut. governors, 19 treasurers (2 in Kiang-su), 18 provincial chief justices, 17 literary chancellors, 15 military governors, and 1,740 prefects and sub-prefects. The number of petty subordinate officers is immense. The whole forms the most stupendous bureaucracy in existence. The mayors in the large cities are also imperial officers, but in the smaller towns and villages the municipal officers are elected by the people. The capital of the empire, Pe-king, has no municipal government separate from the general government. All public offices are open to those who have graduated at the colleges, academies, and universities, without any distinction of birth, nationality, or creed. There is no country in the world where intelligence and education are so absolutely and exclusively the means of obtaining public distinction as in China. True, of the real character and extent of the knowledge required of public officers very little is known to foreigners. Judging by the conversations of

the captured viceroy Yeh, of
1858), there is nothing neces-
officers to know except
ooks" and the "five classics,"
a barren scholastic philosophy,
of China. The exact sciences,
al economy, &c., do not enter
w circle of Chinese erudition, nor
public officers to read law;
that Mr. Cooke has been told
by Yeh. But, such as it is,
cardinal point of the adminis-
of China. The salaries of all
are comparatively low, and hence
revails among them to a fearful
governors-general sometimes
of dollars in this way, even the
rdinates make their hundreds and
Yeh, being questioned how much
secretaries, replied that their
aels ($133) a month, but that
or 4 t s as much by per-
o y salary of a governor-
a lieutenant-governor
r ,, a provincial chief jus-
tary governor 4,000, a general
ne of the central government
uned by foreigners with any
racy, but it is much less than
ed. Though the estimates vary
00 to $440,000,000, even the
would only be at the rate of a
for every inhabitant. The taxes
in kind and partly in money;
anal boats being constantly em-
y the rice and grain collected
to Pe-king. According to Dr.
7,954 land taxes in money, and
grain, are sent to Pe-king, while
in money and $105,689,707 in
in the provinces. This, with
erived from custom and transit
set down by Dr. Medhurst at
362, would give a total taxation
. But there are other sources
e, such as the duties on salt,
stamp tax, government mo-
ing, pearl fishery, the manu-
gunpowder, &c. China has no pub-
Extraordinary sources of revenue,
when necessity demands it, are
and honors, temporary increase
nd contributions from the rich.
ry organization is very defective.
rule, the Chinese hate war, and
er superiority in military power
a higher order of civilization,
em personal courage and praise
heroes in songs and novels.
her advance in numbers, in-
wealth mainly to her peaceful
policy." A standing army has
ce the 7th century. The sol-
ime of peace, quartered on the
villages, or cultivate small farms;
poorly paid, and badly armed and equipped. There is nothing imposing about them except their numbers. The infantry carry matchlocks of the clumsiest kind, or spears, bows, swords, and bucklers; the cavalry, helmets, cuirasses of quilted and doubled cotton cloth, covered with iron plates or brass knobs, bows and arrows, and shields of strong wicker-work. The artillery have guns of a heavy caliber, but scarcely know how to use them. The jingall, a kind of swivel resting on a tripod, is the most effective gun the Chinese possess; brass cannon have been recently cast by them in imitation of the English. The want of courage of the Chinese soldiers has become proverbial, yet it is not without honorable exceptions. The Tartar garrison of the Pei-ho forts stood their ground with firmness in May, 1858. The regular army, or the 8 banners of the Mantchoo, consist of 67,800, or, according to De Guignes, 100,000 Mantchoos, 21,000 Mongolian Tartars, and 27,000 Chinese. The pay of a foot soldier is from $3 to $4 a month, of a horseman about $5 25. The green banner, or militia, numbers 700,000 men, mostly farmers and mechanics, wholly unfit for a serious conflict. Beside these, there are some irregular corps, bringing the total nominal figure of the army up to 1,230,000. Of so-called fortresses China has not less than 1,193, but only a few of them are built in a substantial manner and able to withstand a cannonade, while the rest consist merely of a common wall and ditch. The great wall (*wan-li-chang*, *i. e.*, the myriad-mile wall) on the N. frontier of China proper is the most gigantic work of defence ever erected by man. It was originally built as a bulwark against the invasions of the Tartars (215 B. C.), but has become useless by the accession to the imperial throne of the Mantchoo dynasty. It runs from a point on the coast of Leao-tong, lat. 40° 4′ N., long. 120° 2′ E., in a westerly direction to the Yellow river in lat. 39½° N. and long. 111½° E., thence to lat. 37° N., and again in a N. W. direction to its termination in long. 99° E. and lat. 40° N., making 21 degrees of longitude, and with its windings a length of 1,250 or 1,500 m. In some places it is a simple rampart, in others it has a solid foundation of granite. Its height is from 15 to 30 feet, its breadth such that 6 horsemen may ride abreast on it. There are brick towers upon it at different intervals about 40 feet high. The navy consists of 1,951 war junks, entirely similar to trading vessels, and in no way able to withstand the means of modern maritime warfare. Beside, there is no difference between military and naval service, crews and officers being selected without any regard to their knowledge of naval matters.—The laws of China are collected into a general code (*Ta tsing liuh li*, *i. e.*, statutes and rescripts of the great pure dynasty), and arranged under 7 heads, viz.: general, civil, fiscal, ritual, military, and criminal laws, and those relating to public works. This comprehensive legislative structure was founded as early as 2,000 years ago. A revised

edition of the code, with such alterations or additions as have become necessary, is published every 5 years. In theory this code might be considered as a sort of constitution of the empire, but in practice the high provincial officers frequently supersede it by issuing edicts upon matters that have been provided for already by law, or by reviving some old law, or by forced and arbitrary application of existing laws to special cases. The edicts are placarded in the cities and towns, and the more important ones circulated in pamphlet form. However excellent many of the written laws may be, their execution is by no means such as to give the people at large the benefit of them. Innumerable cases of judicial murder, extortion, and crime are reported in the Pe-king "Gazette," and even the code recognizes cases of oppression and tyranny in which open rebellion of the subjects against the officers of the government would be justifiable. Collusion of police officers with bands of thieves is not uncommon. The people seldom approach their rulers without a gift to smooth the way for them, and avoid them altogether as far as possible. The chief efforts of the officers are directed to putting down the banditti, who are to be considered almost one of the regular institutions of China, and to maintaining a degree of peace just sufficient to enable them to collect the revenue. As to the administration of justice, civil and criminal, it is intrusted to local magistrates. All that has been said about the corruption of officers applies to the judges as well. The cruelty of the tortures by which they sometimes seek to obtain confessions almost surpasses belief. The treatment of prisoners, who are caged like wild beasts, is barbarous in the extreme. Flogging (from 10 to 100 blows), transportation, perpetual banishment to remote provinces, slavery (hard labor), and death are the legal punishments of crime; imprisonment is regarded only as a corrective. Decapitation and strangling are the legal modes of executing criminals, the more cruel modes of quartering, flaying, starving to death, &c., having fallen out of use almost entirely. It is believed that the number of criminals who undergo the penalty of death is not one-half of those who die from the effects of torture and imprisonment. The trials are held in public; they are brief and free of cost; no counsel is allowed to the criminal. Appeals to higher courts are rarely resorted to. Sentences of death require the signature of the emperor, but this form is dispensed with in times of insurrection. Civil suits are generally decided by municipal officers acting as justices of the peace. The police, whose duties correspond to those of the same institution in other countries, have also to superintend the public works.—Indifference to religious matters is a prominent national trait of character. They have not even a general term corresponding to the word religion; *kiao*, the word that comes nearest to it, means only doctrine or creed. The belief in the immortality of the

soul has never taken firm root
The lower classes are mostly pr
adulterated kind of Buddhism,
lapse of time has sunk to the coarse
ism and idolatry. The priests of this
(bonzes), over 1,000,000 in number, ar
greatest part ignorant and depraved,
around the country, or confined in mo
Only the highest grades of the Buddhi
hood are filled by scholars. The emp
self professes the Buddhist creed, but
no influence on the administration of
fairs. "The Chinese, like the Gre
merely ceremonial religion. The e
his officials, following the ancient t
the Chinese dynasties, adore Heaven
the people burn incense to the B
and all worship their ancestors.
universities and in the public inst
are the only portal to rank and o
they teach no religious ideas." "Th
says Mr. Cooke, "can bow in the tem
dha, or join in the Latin Romish mass
to Heaven and Earth, or sit in an A
venticle, or jump through the fire wi
of perfect reason. Hauling the god
in the sunshine, to make him feel how
the ground is, is a practice which shows
cal half belief with which the Chi
his idols." The higher classes
lievers in the doctrines of Con
those of the philosopher Lao-tse
Both deny divine revelation, and are
more than systems of moral philosoph
in a fantastical symbolism. Th
teaches that from the original su
ki) 2 principles emanate: Yang, the
perfection, of the heavenly, of light and
the masculine principle, symbolized
and Yin, the feminine principle, or th
perfection, of the terrestrial, of dark
cold, symbolized by — —. By the co
of these symbols 4 images (*sse-si-u*
sented, viz.: ⚌ ⚍ ⚎ ⚏
sponding to the 4 cardinal virtues, p
rality, justice, and wisdom. From
combination result 8 signs (*kua*), vi
heaven, ☱ moistness, ☲ fire, ☳
☵ water, ☶ mountains, ☴
☷ earth. By the aid of these s
ranged in the form of a circle, Co
scribes the universe, and making t
respond with moral and mental pro
structs an ethical system, scarcely t
a religion. Lao-tse (born 604 B. C.
before Confucius) founded the rel
Tao (supreme reason), which, acco
is anterior to and the source of
(*Ki*, *Hi*, *Kuei*) and all material for
no, he recommends retirement and c
tion as the most effectual means of
our spiritual nature. The professors
ligion (*Tao-sse*, usually rendered
believe in the existence of a spirit
spiritual manifestations, and a migrati
There are 1,500 temples devoted to

attached to the examination halls. The priests of the Tao religion live in temples and small communities with their families, or lead a wandering life, deriving a precarious livelihood from the sale of charms. They have degenerated very much, and are commonly looked upon as ignorant cheats or jugglers. The Buddhists, or the followers of Fo, whose tenets were introduced into China about A. D. 66, have the largest number of temples, but the great mass of the people offer their prayers in any temple indiscriminately, and are perfectly indifferent to the diversities of religious denominations. "Buddhism in China," says Dr. Morrison, "is decried by the learned, laughed at by the profligate, yet followed by all." No religion is taught in the common schools. The real religion of the Chinese is the worship of deceased ancestors. Beside the 3 principal religions, a new creed (Tai-ping) has been established within the last few years. It is a curious mixture of the oldest Chinese religion and Christian doctrines; it recognizes divine revelation as still continuing; its professors are fanatical and intolerant propagandists. The number of Christians in China (most of them Catholics, living in the S. and E. provinces) is estimated at 100,000, that of Jews at 50,000, of Mohammedans (in the W. provinces) at 1,500,000.—The era of the Chinese begins 2697 B. C. They count, not by centuries, but by cycles of 60 years, each of them having a separate name. The year 1858 is the 55th of the 76th cycle. There are few holidays, and no Sunday or general day of rest at all. The year is lunar, but its commencement is regulated by the sun, and new year falls on the first new moon after the sun enters Aquarius.—In no country of the world is education so general as in China. Though the government fosters only the higher branches by supporting colleges (*hio-kung*) in the large cities and provincial capitals, while the primary schools are sustained only by municipalities or individuals, the knowledge of reading, writing, and arithmetic is all but universal. Even the lowest peasant or mechanic knows how to keep his account books. The rules and regulations for the education of children and the prosecution of studies laid down in the book of rites are excellent, notwithstanding their ridiculous minuteness. The quality of the knowledge dispensed in Chinese schools must not of course be judged by the requirements of western nations. Distinction in public life is attained only by scholarship. There are 4 literary degrees, the first of which is called *siu-tsai* (flowering talent), corresponding to the bachelorship of arts; the 2d *kio-jin*, or licentiate; the 3d *tsin-tse*, or doctor; the 4th *han-lin*, or member of the imperial academy. The examinations which the aspirants to public honors have to pass are very severe, but bribery is frequently practised to attain the degrees. The unsuccessful candidates are numbered by hundreds of thousands; they get employment as school-teachers, notaries, clerks, letter-writers, fortune-tellers, &c. Female education is more limited than that of men, but literary attainments are considered creditable to a woman, and the number of authoresses is by no means small. Printed books are cheaper in China than elsewhere, notwithstanding the clumsiness of the printing apparatus. Science and knowledge of course centre in the history and peculiar civilization of China, the outer world occupying a very small space in the mind of the Chinese people. Sir John Davis justly compares the actual state of the sciences among them with their condition in Europe previous to the adoption of the inductive mode of investigation. In mathematics they have made considerable progress since they became acquainted with European mathematical works. Astronomy has not yet been entirely emancipated from astrology. Their geographical knowledge is mainly limited to their own country, though recently some Chinese scholars have adopted more correct ideas on this subject. As to the fine arts, their æsthetical feeling has been developed in a manner so peculiar as to defy all direct comparison with Christian art. While the skilful workmanship in Chinese sculpture, paintings, and architecture may justly be admired, the designs are mostly grotesque and incongruous. No higher standard seems to exist for Chinese art than mere mechanical skill; there is scarcely any vestige of an effort to realize the idea of the truly beautiful and sublime. Chinese artists are able to copy European works of art with admirable accuracy, but they do not appreciate them, or consider them as models worthy of imitation. Landscape gardening is the only branch of art in which the Chinese have been the masters of the Europeans. In this department they aim at a close imitation of nature, but their singular predilection for dwarfish and stunted forms mars the effect of their designs. Their music is painfully inharmonious to cultivated ears. They have a great many stringed and wind instruments, beside drums, bells, &c., but of accord, rhythm, harmony, and melody they have not the least idea. Their instrumental music appears to strangers to be nothing but an exceedingly disagreeable noise. "The *lo*, or gong, is the type of Chinese music: a crashing harangue of rapid blows upon it, with a rattling accompaniment of small drums, and a crackling symphony of shrill notes from the clarinet and cymbal, constitute the chief features of their musical performances. Their vocal music is generally on a high falsetto key, somewhere between a squeal and a scream." However, they enjoy it, and are apt to consider European music precisely in the same light as we do theirs. The art of dancing they set down as a branch of the dramatic art. How Europeans or Americans can enjoy dancing themselves instead of having it done by their hired servants is utterly incomprehensible to the Chinese mind. The drama is very popular among all classes of Chinese society, except the public officers, who are not permitted to witness theatrical perform-

ances because of the vulgarity and obscenity by which the plays are generally characterized. The actors are not respected. Women have not been allowed to appear on the stage since the time when the emperor Kienlung (1736–'96) married an actress; their parts are played by beardless youths or eunuchs. Only in the N. and E. provinces are permanent theatres to be found, while thousands of theatrical companies wander about, giving performances at the expense of wealthy gentlemen, the admission being free to the public at large. The lower classes are very fond of theatrical entertainments, and, as in ancient Rome, there is no shorter road to popularity than the furnishing of gratuitous performances to the people. —The principal occupation of the Chinese is agriculture, which they consider the most honorable of all. In order to remind the people that agriculture is the basis of every elevated state of society, the emperor himself and the viceroys of the provinces once in every year perform the ceremony of ploughing some furrows and sowing rice, that being the most important agricultural product of China. Wheat, Indian corn, rye, barley, buckwheat, oats, millet, common and sweet potatoes, peas, beans, beets, &c., are also grown, but rice is the staple article of food. Nowhere is the soil cultivated more carefully and diligently. Ploughs and harrows are rarely used, the spade and hoe being the principal utensils. The system of irrigation is perfect. The great importance of manuring is fully appreciated by the Chinese farmer. As the scarcity of domestic animals prevents the application of stable manures on a large scale, all refuse applicable to the purpose is carefully collected and sold to the farmers. Human ordure, ashes, muck, gypsum, offal, hair (even the barbers gathering the product of their tonsorial performances, and selling it to the farmers), and whatever other matters can invigorate the soil, are freely used. The density of the population rendering it impracticable to let the fields lie fallow, and the rotation of crops not being well understood, the Chinese sustain the productiveness of the soil simply by constant manuring. In the fertile country between the Yellow and Blue rivers and south of the latter, 2 crops are obtained from the same field in one year. The threshing of the grain is performed either by treading or by rollers and flails. A great obstacle to rational agriculture is the minute subdivision of the soil. The greatest part of the cultivated land in China is employed in raising food for man. The sedge in the marshes and grass on the hills are collected for fodder and fuel, but it is believed not a single acre of land is sown with grass seed. Cattle-raising is, therefore, the most unimportant part of the farming business Grapes are raised to some extent, but no wine is made from them. The tea plant, sugar cane, cotton, and mulberry are grown on plantations. The flesh of domestic animals is rarely used for food, the hog excepted, and butter and cheese are not made at all. Poultry fu
vorite meat for all classes of t
slices of cold roast goose figuring on
tables of the rich instead of bread,
not customary to have at dinner.
worm furnishes a raw silk unsurpass
ity. The fields of different owners
in America and England, separated
walls, or hedgerows; and hence the
plain appears like a vast garden. in
plats seem to be mere beds. H
able only in the mountainous
W. and S. W.; there are no
China. The skill exhibited by the
their various modes of catching a
fish is admirable. One-tenth of the
derive their food from the water.
are trained in great numbers to
their masters.—In regard to the
arts the progress of the Chinese is
imitative faculty having in the c
become stronger than the inventive,
to their implements and designs, and
to adopt improvements in either.
obstinacy in this respect has been
exaggerated. They have adopted fr
nations the telescope, microscope,
watches, the manufacture of
work, and Prussian blue. As to
chinery, they do not want it, since
cheap that it would appear cruel to
by mechanical forces. In the arts of
the Chinese have attained only to
except in the alloying of metals, an
or carved work in gold and silver.
which they excel. In the manufa
though it has been but recently
they are making good progress.
lain and lacquered ware is uneq
except the Japanese. The
original among the Chi
not yet succeeded in fully equali
products. A durable cotton clot
made in the central provinces. The
tion of leather is small, it being p
tender in consequence of the rapid
which the tanning process is comp
only woollen fabrics of the Chinese
soles and hats and a sort of rug. Th
work in ivory, wood, and horn
delicate. The Chinese mechanic
trades are accustomed to form ass
certain rules and regulations, but th
mitted to voluntarily, no restraint
posed by the state on the liberty
Handicraftsmen of every trade wand
the streets of cities and villages, carr
implements with them, ready to do
on the spot.—"The Chinese are emi
ing people; their merchants are acu
ical, sagacious, and enterprising, not
pulous as to their mercantile h
transactions, but in large deal
that regard for character in
their obligations, which exten
engagements usually produce." Th

[illegible] of China is undoubtedly of stupendous [illegible], the foreign commerce (supposed to [illegible]00,000,000 annually), compared with [illegible] but trifling. It has been asserted that [illegible] greater amount of tonnage belonging [illegible] than to all other nations com[illegible]ds of freight boats are constantly [illegible] gigantic network of natural and [illegible] communications. To obtain ac[illegible]al tables on the value of the in[illegible] is impossible. The principal ar[illegible]ort are: tea (165,000,000 lbs. from [illegible] to June 30, 1857), raw silk and [illegible] keen cloth, mats, porcelain and lac[illegible] various officinal plants, fire crack[illegible] the United States), and other ar[illegible]ion, gold leaf, sea shells, fans, [illegible], grass cloth, vegetable tallow, [illegible], which singly form only trifling [illegible] trade, while their aggregate value [illegible]ble. The value of the exports is [illegible]s the value of the imports, and the [illegible] trade is, therefore, a heavy one [illegible] the western nations trading with China. [illegible] silk have risen from 10,727 bales [illegible] bales in 1855, and the deliv[illegible] of China silk in 1856–'57 [illegible]315 bales. In the 7 months [illegible] 31, 1858, however, only 1,621,465 [illegible] was exported to England, against [illegible] in the corresponding period of the pre[illegible] year. Of thrown silk the exports were 151,537 pounds in the same period, against 136,400 in 1857. But the exports of silk are insignificant compared to the quantities used at home, which are estimated at 75,000,000 pounds or 750,000 bales, representing a value of about $95,000,000 per annum. A traveller who visited the province of Che-kiang in the early part of 1857, describes the head dress of the women, in which about half a pound of silk is used by each woman, the back-hair being twisted in a roll and bound tightly from the poll with black silk cord for a length of 7 or 8 inches. The imports of opium were 4,054 chests in 1790, 4,570 in 1800, 4,968 in 1810, 4,006 in 1820, 16,877 in 1830, 20,619 in 1840, 52,925 in 1850, 53,881 in 1855, 66,500 chests, at an average price of $401 to $472, in 1856, 76,000 in 1857. The new emperor has legalized the opium trade at 40 taels per chest duty, which will immensely extend the sale. The duty in 1857 yielded $2,486,000. The other principal articles of import are rice, raw cotton, longcloths, domestics and sheetings, ginseng, tin, lead, iron in the form of bars, rods, and hoops, and woollen goods. Tripang, birds' nests, sharks' fins, and fish maws are imported as articles of food from the Indian archipelago; precious stones and pearls ($300,000 annually) from India or central Asia. Rhinoceros horns are brought from Burmah and Sumatra, a perfect one selling as high as $300 (those coming from Africa only bring $30 or $40). Gold and silver thread is largely imported for embroidery. The importation of metals has steadily increased with the enlargement of the trade. Fine furs are chiefly brought from Mantchooria and Siberia. Among the most saleable articles of foreign manufacture are clocks and watches, cheap jewelry, telescopes, cutlery, snuff, corks, glass ware, lamps and chandeliers. Up to 1842, Canton was the only port open to Europeans, and the intercourse was carried on through mercantile companies who had a monopoly of the trade. Since then 5 other ports (Fu-chau, Ning-po, Shang-hai, Che-kiang, and Amoy) have been open to Europeans and Americans, and 4 additional ports have been added to the list by the treaties negotiated at Tien-tsin in June, 1858. But the hope of bringing the value of the imports into China nearer to that of the exports, in order to avoid the heavy shipments of silver to that country, has as yet not been realized. The value of the imports from China into the United States in the year ending June 30, 1857, was $8,356,982. The value of domestic exports, comprising cotton goods to the extent of $1,094,018 ($908,719 in 1856, $588,521 in 1855, $963,288 in 1854, $2,331,359 in 1853, $2,201,496 in 1852), and $295,913 in specie, was $2,019,900; the foreign exports (comprising $2,087,786 in bullion and specie) were $2,375,230; total exports, $4,395,130, leaving a balance against the United States of $3,961,802. In 1857 over $2,000,000 in Mexican silver was exported to China from San Francisco, and about $100,000 of quicksilver. The computed real value of the imports into Great Britain from China, including Hong Kong, was £9,125,040 in 1854, £8,746,596 in 1855, and £9,421,648 in 1856. The exports of Great Britain to China represented a value of £843,000 in 1834, £1,326,000 in 1836, £524,000 in 1840, £969,000 in 1842, £2,395,000 in 1845; but this increase was simply the result of over-speculation; the exports diminished gradually, until in 1854 and 1855 they had sunk below the amount reached in 1836, viz.: £1,000,000 in 1854, £1,290,000 in 1855. In 1856 they rose again to £2,249,458. In the half year ending June 30, 1858, the exports of British produce and manufactures to China were £1,499,314, showing an increase of £616,210 over the same period of 1857. Mr. Cooke remarks: "The Americans beat the English manufacturers in the exports of drills and sheetings. At Shang-hai, in 1856, the imports were 221,716 pieces of American drills against 8,745 English, and 14,420 of American sheetings against 1,240 English." In woollen goods the English sustain a close rivalry with Germany and Russia. Speaking of cloth, Mr. Cooke remarks: "The Chinaman prefers the best English, but he cannot afford it, and buys it in small quantities. Next to that he prefers the Russian, for it is stout and serviceable; and he says in his native idiom, although it 'hairs' (roughens) easier than the best English, it does not so soon do so as the inferior English article. The great bulk of the cloth sold to the Chinese, therefore, is Russian. Again in cottons the Chinese seem to like a thicker cotton

and narrower width than the English manufacturers are in the habit of sending."—Banks of deposit and discount existed in China much earlier than in Europe; insurance companies were not known until regular intercourse with western nations began. Paper money, formerly issued in immense quantities, is now almost unknown as a general circulating medium. Loan offices and pawnbrokers' shops are numerous. The legal interest allowed on small loans is 3 per cent. per month, but among business men 10 or 15 per cent. per annum is the usual rate. The carrying of letters is not a government monopoly, but is left to expresses. Travelling is almost exclusively done by water in the south, by sedan chairs or clumsy carriages in the north of the empire. The roads are kept in repair by voluntary contributions and donations. No tolls are charged on roads or canals. Inns and taverns are generally of the meanest description; but some good hotels are kept on the principal highways of travel. The monetary system is arranged on the principle of weight, and the names *tael*, *mace*, *candareen*, and *cash* are applied to the divisions, though the cash (*tsien*) is the only native coin now current, while silver dollars are employed as a commercial medium along the coast. The *tael* (equal to 10 maces, or 100 candareens, or 1,000 cash) is $1 40, but the value depends upon the rate of exchange. The native bullion is called *sycee*, and the ingots weigh from 5 to 50 taels. The tael, catty, and pecul are the only weights commonly employed. The catty is 1⅓ lbs. avoirdupois, the tael 1⅓ oz., and the pecul 133⅓ lbs. The common measures correspond nearly to the gill, half pint, pint, and peck. Of long measures the *chih* or foot is the unit of length (according to the tariff, 14.1 inches English). It is subdivided into 10 *tsun*, and each *tsun* into 10 *fan*. The decimal division runs through nearly all the Chinese weights and measures. The Chinese mile (*li*) is 0.3576 of the statute mile. The land measures are the *mau* (733.32 sq. yards) and the *king* (one *king* is 100 *mau*, equal to 15.13 acres).—The domestic and social life of the Chinese has, perhaps, more features in common with western nations than that of other oriental peoples. Although polygamy exists among the wealthier classes, and their women generally live in seclusion, family life is much esteemed and cultivated among them. The first wife has the full control of the household, while the concubines are little more than servants and housemaids. The Chinese illustrate the relation by comparing the wife to the moon and the concubines to the stars, both of which, in their appropriate spheres, revolve around the sun. The utmost respect and obedience to the behests of their parents are enjoined to children. The betrothment of the children is entirely in the hands of the parents, and the obligation of the former to fulfil the contract made by the latter is enforced by law, even to the annulling of an agreement made by a son himself in ignorance of the arrangements of his parents. Cleanliness is not
of the Chinese, either ir
tions or their persons.
underclothes until they are worn
houses are generally low, the roofs l
the catenary curve of their edges sh
tent is the type of the dwelling.
style of building, and the arran
interior, there is every variety, fr
hovel to the sumptuous palace.
houses are poorly ventilated and
appearance of the rooms would
and uncomfortable without the
furniture and variety of or
parks connected with the
wealthier classes are laid out in
The streets in Chinese cities are
crooked and narrow; few of th
12 feet in width, and most of t
are less than 8. No public squar
closeness of these lanes. Ventil
course, very imperfect; drainage
tially attended to, and the sewers
exude their contents over the pathw
to this the fact that the offal and
carried through the streets by the
and we can understand the bad odor
Chinese cities are held, and also the
of ophthalmic diseases among the peo
narrow streets present a singularly
spectacle to strangers. Itinerant
abound; blacksmiths, tinkers, glass
barbers, druggists, shoemakers and
fortune-tellers, herb-sellers, book-selle
changers, and many other tradesmen.
movable establishments in the
great as the bustle and crowd
altercations or collisions are ra
a remarkable quiet prevails. W
the government officers are held
Ordinarily, conflagrations are soon
The dress of the Chinese is neither so
nor so unchanging as is generally
Fashions alter there as well as elsew
not so rapidly as among European n
were not for the shaven crown and
of the men, and the crippled feet of
little fault could be found with th
combining, as it does, warmth and
fabrics most worn are silk, cotton,
for summer, with the addition of furs
in the winter. The garments of
fer more by their colors than by their
cut. Inner and outer tunics made
silk, a pair of loose trowsers over w
leggings are pulled in winter, and
thick felt soles, are the principal
dress. The diet of the Chinese is
variety, wholesome, and well cook
many of their dishes would appear
the taste of Europeans and America
proportion of animal food is probabl
among them than among any ot
same latitudes. Cookery is al
as a science in China. Mr. Wingrov
assigns to the Chinese in cookery

ition, below the French and above the [illegible]sh. The Chinaman considers the English[illegible] mode of feeding the nearest approach [illegible]t of the savages of Formosa; for, says [illegible] Englishman does the chief work of [illegible]ghter-house upon his dinner table, and [illegible]ts the principal work of the kitchen to his stomach." The Chinese cook is anxious to disguise the original shape and appearance of the food as much as possible. He discards spices, but uses plenty of oils and fats. Many strange articles of food are eaten by the Chinese, but they are generally prepared in such a manner as to appear palatable to unprejudiced foreigners. Coffee, chocolate, beer, cider, porter, wine, and brandy are unknown; their common beverages are tea and a spirit distilled from rice. The native tobacco is of an inferior quality; it is not chewed, but smoked or used as snuff. The pernicious habit of opium smoking prevails among all classes, in spite of the earnest efforts of the government to prevent it. The social life of the Chinese is generally described as a mass of ceremonials and cold formalities, devoid of all real kindness of heart; but this opinion is probably based upon incomplete observations. "In their common intercourse the Chinese are not more formal than is elsewhere considered to be well-bred; it is on extraordinary or official occasions that they observe the precise etiquette for which they are famous. Whether in the crowded and narrow thoroughfares, the village green, the bustling market, the jostling ferry, or the thronged procession, wherever the people are assembled promiscuously, good humor and courtesy are observable." Street fights, assaults, and murders are almost unknown among the Chinese, though they resort to assassination of foreigners in times of war. They are fond of processions and public shows, and celebrate several imposing popular festivals. Thus new-year's day, the festival of the dragon boats, the feast of lanterns, the fishermen's festival, &c., are occasions of general rejoicing and merry-making. Gambling is universal. Theatrical representations constitute a common amusement. The violent and gladiatorial sports of other countries are held in contempt by the Chinese. Duels are unknown among them, and they consider a resort to force as proof of an inferior kind of civilization. The principal drawbacks of the Chinese character are their revolting licentiousness, in which they rival the ancient Romans at the time of the decline of the empire, and their mendacity.—The history of China dates back nearly 5,000 years, but up to the year 2207 B. C. it bears a mythical character. The Chinese myths begin with the reign of the Tian-hoang, Ti-hoang, and Yin-hoang (the celestial, the terrestrial, and the human rulers). After them, Fu-hi, who in the old legend appears also as a demigod, became the founder of the Chinese empire (2650 B. C.). He is said to have taught the people cattle-raising and writing; to have introduced the divisions of the year, the institution of marriage, &c.; and to have died at the age of 200 years, after a reign of 115 or 164 years. His successor, Shin-nung, during a reign of 140 years, introduced agriculture and medical science. The next emperor, Hoang-ti, is believed to have invented weapons, wagons, ships, clocks, musical instruments, and to have introduced coins, weights, and measures. His 3d successor, Ti-ku, established schools, and was the first to practice polygamy. In 2357 B. C. his son Yao ascended the throne, and it is from his reign that the regular historical records (*Shu-king*) begin. His reign lasted from 2357 to 2258 B. C., during which time he organized the political system of the country on a firm basis, fostered agriculture, industry, and commerce, built canals, roads, &c. His son and successor, Shun (2258–2207 B. C.) ruled in the spirit of his father. So far, if the old traditions are to be relied upon, China enjoyed a golden age of national felicity. The beginning of the real history of China inaugurates a series of internal broils, revolutions, wars, and changes of dynasty. The stagnation and petrifaction which is somewhat generally supposed to be the prominent characteristic of China, does not really exist, at any rate not in her political history. The dynasty of Hia (2207–1767 B. C.) was founded by Yu the Great, who was the first to unite supreme ecclesiastical power to the temporal authority. His grandson was dethroned by a popular revolution in favor of his brother Chung-kang, but the dynasty continued to degenerate until it was expelled by a popular movement, and replaced by the dynasty of Thang or Yin, which gave 28 rulers to the country (1766–1122), most of them vicious and cruel. The last one, Chao-sin, terminated his miserable career in the same way as Sardanapalus. Wu-wang, the general who had succeeded in overthrowing him, became the founder of the dynasty of Chao and the regenerator of the empire. His dynasty ruled for a period of 873 years, the history of which is an almost uninterrupted catalogue of feuds, revolutions, wars with the Tartars, usurpations of princes and provincial governors. During the reign of Li-wang (571–544), the principal disciple and expounder of Confucius, Meng-tse (Mencius), was born. The dynasty of Tsin (249–206 B. C.) restored the unity of the empire by resubjecting the vassal states which had obtained independence under the preceding weak rulers. Ching-wang (246–210) erected the great wall for the protection of the empire against the incursions of the Tartars, and assumed the title of *hoang* or emperor (the former historical rulers were only *wungs* or kings). Under the name of Tsin-chi-hoang-ti, he is celebrated as the national hero of China. In order to destroy all traditions of the former political institutions, he decreed that all books treating of them should be burned. The writings of Confucius or Kung-fu-tsé were among them, a few fragments of which only could be found afterward. The dynasty of the Han (206 B. C. to A. D. 220) gave to the country the emperors Wen-ti (180 B. C.), the restorer of the ancient literature; Wu-ti (141 B. C.), a great patron of science and art; Siuen-ti (73 B. C.), who subjected the Tartar country as far as the Caspian sea; Ming-ti (A. D. 58–76), under whose reign the Buddhist priest Ho-shung, from India, introduced the Buddhist creed, while the apostle Thomas is believed by the Armenian Christians to have been in China; and Ho-ti (A. D. 89–106), who introduced the culture of the grape. About A. D. 200 a Roman embassy is said to have come to China. From A. D. 220 to 260 the empire was divided into 3 kingdoms, which were reunited by Wu-ti, the founder of the 2d dynasty of the Tsin (A. D. 260–420). The Tartars, who had been kept in check by the former dynasty, now obtained a firm foothold in the northern portion of the empire, where they established an independent kingdom (386). Four dynasties (Sung, Tse, Liang, and Chin) ruled the southern empire until 590, a period replete with domestic wars, religious dissensions, and palace revolutions. In 590 the prince of Sui, having subjected the Tartar kingdom, conquered also the southern empire and reunited them. He was a wise ruler, a promoter of science, education, industry, and commerce. During the dynasty of the Tsung (619–907) Christianity was preached by the Nestorian Olopwen (636). The emperor Kao-tsung extended his conquests to the boundaries of Persia. His son Tai-tsung was the Charlemagne or Haroun al Rashid of China. His successors became abject tools of their eunuch courtiers (9th century A. D.), who were destroyed by Chao-tsung (890), but too late to save the dynasty. Once more the empire was torn by the feuds of contending dynasties, and the Tartars, whose relation to the Chinese empire was strikingly similar to that of the German tribes to the declining Roman empire, increased in power and importance. Tait-su, the founder of the 2d dynasty of the Sung, and his successors (960–1279), under whose reign the arts and sciences flourished, were unable to keep the Tartars down. They were compelled to seek the aid of one tribe against another, but were in turn assailed by their allies, until the Mongolians overran the empire. Genghis Khan sacked Pe-king in 1215, and Kublai Khan (Chinese *She-tsu*) established the first Mongol dynasty (1279–1368), the last emperor of the Sung dynasty having drowned himself and family after the decisive battle. The conquerors did not attempt to change the national customs and institutions, but favored Buddhism. Kublai conquered Burmah, Cochin China, and Tonquin. In his reign the first European traveller, Marco Polo, came to China. In 1294 the first Catholic missionaries appeared at Peking. In 1342, a famine having destroyed 13,000,000 people, a general revolution broke out. In 1358 a Buddhist monk of low birth, Chu-yuen-chang, assumed the lead of the revolution, overthrew the Mongolian dynasty, and ascended the throne, under the name of Hung-wu. His dynasty (Ming) lasted 276 years (1368–1644), and gave to the country 16 rulers, most of them well-meaning and efficient. About the middle of the 15th century the Tartars again invaded the empire, but were repelled. The invasions of the Mantchoo Tartars commenced under the reign of Shi-tsung (1522–1567). About the same time, the Portuguese began to trade with the neighboring islands. In 1583 the Italian Jesuit Ricci was allowed to preach Christianity in China, and by conforming it in many respects with the traditions of Confucius he made many converts, even among the mandarins. Soon afterward the Spaniards conquered Macao from the Portuguese. In consequence of an unsuccessful attempt of the Japanese to conquer Corea (1592), that country was annexed to China. In 1604 the Dutch sent 3 vessels to China, but were not admitted. When, in 1622, they tried to enter the empire by force, they were defeated; still they succeeded in establishing themselves on one of the Pheng-hoo islands, which they afterward exchanged for Formosa. In 1615 the Mantchoo Tartars, exasperated in consequence of the assassination, by order of the Chinese emperor, of their king, had commenced hostilities, and when in 1635–'44 the empire became again the theatre of bloody internecine wars, they took sides with the defeated imperial party against the insurgent usurper Li-tse-ching, defeated him, entered Pe-king, and proclaimed Shun-chi, the youthful son of their own king, emperor of China. He was the founder of the present Mantchoo dynasty, which seems to have never succeeded in overcoming completely the strong nationa antipathies of the Chinese. In 1658 the Dutch were once more refused admission, while the Russians were allowed to trade with the northern portion of the empire. Shun-chi was educated by the German Jesuit Adam Schall, who, as president of the board of mathematicians, became in fact the prime minister. In 1661 Kang-hi succeeded to the throne. He conquered Formosa and Thibet, improved the financial condition of the government, promoted science and literature, established schools and colleges, had the different provinces of the empire surveyed and mapped by Europeans, and restored the Christian churches to the missionaries (1671). Two Frenchmen, Gerbillon and Bouvet, were his favorite advisers. During his reign the city of Pe-king was destroyed by an earthquake, when 400,000 people perished among the ruins. The British established themselves on the coast. Yung-ching (1722–1736) expelled the missionaries from the schools, in consequence of their bickerings among themselves. His son Kien-lung (1736–1796) extended his dominion over the largest portion of Central Asia. Although in general just and well-meaning toward his subjects, he for a time persecuted the Christians, and turned a deaf ear to the requests of European powers (Russia excepted) to be admitted to commer-

th China. His successor Kia-
a voluptuous and cruel mon-
to check the anarchy created
movements against his ty-
1807 Mr. Morrison, the first
issionar came to Canton, trans-
e into nese, and in conjunction
d the Anglo-Chinese
1820 Tao-kuang as-
(died Feb. 24, 1850). The
event of his reign was the first
Britain, known as the opium
, having sent an unsuccessful
China as early as 1596, did
foothold in that country until
17th century. An embassy
to Pe-king in 1793 was kindly
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d ships. The Chinese
esirous of putting an
which the morals of mil-
ople were corrupted, in 1838
of opium a capital crime, con-
sing military force at Canton
and compelled the British mer-
ver up all their stock of opium,
20.283 chests, worth $20,000,000,
oved (March, 1839). Still more
were taken by Gov. Lin, in
which all Englishmen residing
t refuge on the shipping off Hong
–21). Negotiations between the
ner, Elliott, and Lin, led to no
or insisted upon the aban-
opium trade, which the British
to promise. Hostilities there-
when an attack of the Chi-
sh shipping was repulsed.
1840 Gen. Yeh led a strong
d on Feb. 28 the English ship-
cessfully attacked by fire-ships.
war had been declared by the
ment, and on June 28 a fleet
ton. July 5, Capt. Bremer occu-
of Chu-san. Admiral Elliott de-
ortifications at Amoy, and sailed
f Pe-chi-li, in order to frighten
into concessions. Negotiations
ed at Canton, but languished un-
destroyed the fortifications at the
an. 9, 1841), when a preliminary
eed to by the Chinese commis-
, unsatisfactory to both
to be ratified, hostilities recommenced Feb. 25. The Chinese flotilla was destroyed and the suburbs of Canton were taken by the British. On May 24 another energetic attack on Canton led to another treaty of peace, which was not acceptable to the British government. Parker, the newly appointed British naval commander, having arrived Aug. 10, the operations on the eastern coast were resumed, Amoy taken (Aug. 26), Chu-san reoccupied, and Ning-po taken (Oct. 9), the Chinese garrison having for the most part drowned themselves in order to avoid captivity. The next campaign (1842) was directed against the province of Kiang-nan. Proceeding from Chu-san, May 13, the British took the port of Cha-pu (May 17), also the fortifications on the Wu-sung-kiang (June 16), and Shang-hai (June 19). On July 6 the fleet set sail for the Yang-tse-kiang, took the fortress of Chin-kiang after a severe struggle, and appeared before Nan-king Aug. 9, when at last the imperial commissioners, I-li-pu and Key-ing, consented to reopen negotiations, and a treaty of peace was concluded Aug. 29, 1842, which, it was said, obtained the signature of the emperor on Sept. 1, though this fact has of late become doubtful. By this treaty commercial intercourse was restored, the ports of Amoy, Foo-chow, Ning-po, and Shang-hai, beside Canton, were opened to all nations, and foreign consuls admitted there, the island of Hong Kong ceded, and an indemnification of $21,000,000 accorded to Great Britain, for the payment of which Chu-san was to be held as a security. By a supplementary treaty (Oct. 9, 1843) British merchants were allowed to lease real estate at the above ports, to travel within certain limits, &c. Other nations followed in the steps of Great Britain. The United States, in a treaty concluded July 3, 1844, obtained even greater advantages than England; and France, in a treaty ratified Aug. 25, 1845, stipulated for the toleration of Christianity in the 5 ports. Still the concessions wrested from the Chinese government were, in a great degree, practically neutralized by the intensely hostile feeling of the people against all foreigners, and some of the most important stipulations remained a dead letter in spite of repeated promises of the authorities extorted by warlike demonstrations (April 2, 1847, and Dec. 1847). Even the death of the emperor Tao-kuang, and the accession of his son, Hien-fong (1850), whose tutor, Seu, was supposed to be friendly to foreigners, did not effect a change of policy on the part of the Chinese.—In the mean time disturbances had arisen in the interior of the empire, which gradually assumed the dimensions of a political revolution. Numerous bands of robbers infested the provinces of Kuang-si and Kuang-tung; and although within the years 1848 and 1849 not less than 1,500 criminals were executed at Canton, the bands increased in numbers and strength. In 1850 the secret triad society thought the moment propitious to overthrow the hated Mantchoo

dynasty, which had fallen into contempt because of its inability to repel the Christian powers. Their leader, proclaiming himself a descendant of the Ming family, assumed the imperial name of Tien-te, and, by promising the people deliverance from the tyranny of the foreigners (Mantchoos), gathered around him a large force of malcontents. The words *Tai-ping* (general peace) were inscribed on their banners; a kind of golden era was promised to the natives, and their programme was largely tinged with communist ideas. At the same time they proposed to restore the true religion of Shan-ti. This name, by which God had been known among the Chinese 4,000 years ago, was now used only by the Chinese deists, who discard all revealed religions; its use by converts to Catholicism was prohibited by the pope Benedict IV., but was adopted by the Protestant missionaries. Hence the opinion began to prevail that the rebels were a sort of Protestant Christians, a party of general reform, a young China, accessible to the influence of Christian civilization, nay, desirous of intercourse with foreign nations. Missionaries took sides with them; some English, American, and French adventurers enlisted in their ranks; foreign plenipotentiaries entered into negotiations with them. By these means their strength increased rapidly, and the imperial government, which formerly had thought lightly of the movement, became seriously alarmed. A special commissioner was sent to Kuang-si in 1850, then two governor-generals, and in 1851 the prime minister of the empire. In 1852 the insurgent forces were surrounded in Yong-ngao; 2 detachments succeeded in cutting their way through the imperial army, but the third one was cut to pieces, Tien-te himself made a prisoner, sent to Pe-king, and there executed, a fact which the insurgents kept secret for several years. A new leader now appeared on the scene. Hong-siu-tsiuen, born in 1813, in the vicinity of Canton, a country schoolmaster, had become acquainted with Christianity, and the impression had settled upon his mind that the Christian God was the Shan-ti of the ancient Chinese, and that he himself had been chosen by God to restore the true religion, and to destroy paganism. He made proselytes, and the persecutions which they had to suffer from the government drove them into the ranks of the rebels. After Tien-te's capture and death, Hong-siu-tsiuen gathered all the rebel forces, sacked the city of Han-yang and the great commercial emporium of Han-keu (Dec. 23, 1852), and took the fortress of Hu-kuang on the opposite side of the river Yang-tse by storm (Jan. 12, 1853). The emperor now sent 20,000 choice Tartar troops from Mantchooria, and another army from Pe-king; but before they arrived the insurgents had become so powerful that the imperial general did not venture to attack them. They had, March 20, taken Nan-king; April 2, Chin-kiang; on the following day, Kua-chow, and the large city of Yan-chow,

and had thereby become masters of
arteries of domestic commerce. The
authorities applied to the representativ
European powers for assistance, but
flat refusal. The British commissione
Bonham, went to Nan-king (May, 185
der to ascertain the objects of the re
obtained friendly assurances. By
Hong-siu had assumed the title of
prince and restorer of peace (Tai-
4 subordinate kings commanded
and the fanaticism of his adherents,
numbered by hundreds of thousands,
to guarantee his ultimate success. H
ed to be the second born son of God,
legitimate ruler of the world. At t
time he was shrewd enough to foster
lief of the British and Americans that
religion, which in fact was only a
tissue of odd doctrines and custo
estant Christianity slightly modi
while the Protestant powers seemed
to assist the rebels at least indirectly.
the leading Catholic power, and R
interests in China were different
of England, favored the imperial ca
on neither side were these sympat
enough to shape out a distinct an
policy. Beside, the tendency of R
large her dominions on the river
the probability that a dismembermen
Chinese monarchy would bring the
frontier nearer to India, cooled the
sympathies with the rebels conside
September, 1853, a successful insurre
out at Shang-hai. At this time the o
of the Mantchoo dynasty seemed to b
certain. Hong-siu attempted to
the capital of the empire. He defe
rial army on the left bank of the Yang
took the city of Fung-yang, and
Kai-fong and Hwai-king, on the Ho
these were his last great successes. In
the rebel army was pressed very hard
perial army corps, and compelled to
ward Nan-king (1854). Shang-hai w
been reconquered by the imper
same time, if the rebels had not
by British and Americans in d
camp of the beleaguering force. In
rebellion, independent of that of Ho
out in the vicinity of Canton, but
was so unmistakably that of sheer
that it found little favor with the
with foreigners. The representati
land and the United States, anxi
the confidence of the imperialists,
their assistance for the suppression
bellion. They prepared to go to P
order to close an arrangement to t
the emperor, but were not allowe
the imperial government judging that
entangling alliance would be more d
than the combined efforts of the reb
the foreign powers resolved upon repr
rebellion, at least in the seaports. A

squadron, under Admiral Laguerre, made two attacks on Shang-hai, both of which were vigorously repulsed by the rebels (Jan. 1855); but when the British and Americans likewise took sides with the imperial army, the rebels withdrew from Shang-hai (Feb. 17, 1855). In a similar manner Amoy had been re-occupied by the imperialists, and in March, 1855, the rebels who had beleaguered Canton withdrew. Thus the rebels were reduced to Nan-king, and a belt of 100 m. in width on the Yang-tse-kiang, from Ching-kiang on the E. to Yo-chao on the W. Hemmed in on all sides, but little was heard of their doings until in 1856 they succeeded in repelling the imperial forces toward Su-chao. In the winter of 1856 dissensions arose among the rebels; the "king of the east," with all his men, was massacred by the "king of the north," by order of Hong-siu, and a bloody feud was the consequence, ending in the destruction of the king of the north and his followers, but the authority of Hong-siu remained unshaken.—Scarcely had the imperial power been reëstablished in the northern and southern provinces, when another storm threatened to shake the throne of Hien-fong. Shortly after the termination of the war in the Crimea by the treaty of Paris, the British government turned its attention to affairs in China. On Oct. 8, 1856, the Chinese authorities at Canton had captured the Chinese crew of a Chinese lorcha, who followed the smuggling business under the protection of the British flag. Satisfaction was demanded for this "outrage" by the British consul; and the governor-general Yeh having haughtily refused all explanations, the British squadron, under Admiral Seymour, destroyed by a bombardment of 3 days the government buildings at Canton. This resort to force on the part of the British seemed to be the signal for the other foreign nations to join in a general crusade against China. France immediately took sides with her ally, and even the United States, quite unexpectedly, took part in the hostile proceedings. On Nov. 15, an American boat going from Whampoa to Canton was fired into, "by mistake," from the Barrier fort. Without waiting for explanations, Commodore Armstrong, of the U. S. frigate Portsmouth, resolved upon chastising the Chinese, and on Nov. 21 and 22 attacked and destroyed 4 forts, mounted with 165 guns. This *coup de main*, however, seems not to have been approved of by the U. S. government, nor considered by the Chinese as proof of hostility on the part of the United States. At Canton great preparations were made by Governor-general Yeh to repel further attacks of the British, whose position became very unpleasant, when, in 1857, on account of the Indian rebellion, the reënforcements destined for China were diverted to India. On Dec. 4, 1856, all the dwellings and storehouses of Europeans at Canton were burned by a Chinese mob, and many Englishmen fell victims to the hatred of the populace. But no further hostilities occurred until May 27 and June 1, 1857, when the English forces destroyed a small Chinese squadron of junks near Fak-shan, not however without discovering that the Chinese had ceased to be the contemptible adversaries they had been in the opium war. Meanwhile, Lord Elgin had been sent by the British government as plenipotentiary to bring the Chinese emperor to terms, Baron Gros by the French, Mr. Reed by the government of the United States, and Count Putiatine by Russia. Lord Elgin having arrived at Hong Kong in July, 1857, Canton was declared to be in a state of siege. Still the hope seemed to be entertained on all sides that the Chinese emperor would disavow the acts of Yeh, and hostile proceedings were therefore postponed. But on Sept. 12 the Chinese government declared war against England. At that time the Russian plenipotentiary had arrived at Shang-hai, and the fact was dwelt upon that he conferred exclusively with Americans. When, on Nov. 7, Mr. Reed arrived at Hong Kong, on board the U. S. steamer Minnesota, the fact of a friendly and peaceful coöperation of the United States and Russia, in contradistinction to the aggressive policy of England and France, became still more manifest. When at last the allied forces had been concentrated at Hong Kong, an attack was resolved upon. On Dec. 15 the allies occupied the small island of Do-dar, opposite Canton, and sent an ultimatum to the governor-general. No satisfactory answer having been received, and an offer of Mr. Reed to interpose his good offices having been haughtily rejected by Yeh, the city was bombarded on Dec. 28; a force of 4,600 British and 900 French soldiers was landed, Fort Lin taken, and on the following day the Magazine hill and Gough fort, commanding the city from the N., were stormed. Still, though Canton was now entirely defenceless, neither Yeh nor the inhabitants seemed to take the least notice of the presence of the enemy. On Jan. 1, 1858, the captured forts were destroyed by the allies, and on Jan. 5 they took possession of the city. The governor-general Yeh was taken prisoner, and afterward sent to Calcutta. The city of Canton was garrisoned by British and French troops, and on Feb. 10 the blockade was raised. But the hostile feelings of the population were not to be propitiated. From week to week the people became bolder, and when (June 2, 1858) Gen. Van Straubenzee had made an unsuccessful attack on the "braves" prowling around the city, assassinations and assaults of Europeans by the Cantonese populace became so frequent that in some cases the most terrible revenge was taken by the allies for the purpose of checking these outrages. In the mean time the allies had resolved upon carrying the war to the very gates of Peking. In March, 1858, they went to Shang-hai, and on April 11 the combined fleet set sail for the mouth of the Pei-ho river. On April 29 they cast anchor in the gulf of Pe-che-li.

An ultimatum sent to Pe-king having remained unanswered, the vessels of light draught were hauled over the bar of the Pei-ho, and the forts, defended by several thousand Tartar warriors, with 138 guns, were stormed by 1,500 British and French troops (May 20). The allies then moved up the Pei-ho river to the city of Tien-tsin, from which place to Pe-king the distance is only some 90 m. By this threatening demonstration the obstinacy of the Chinese government was at last broken. The emperor appointed plenipotentiaries, who met the ambassadors of the western powers near Tien-tsin; and on Aug. 25, 1858, the first news despatch received in America by the Atlantic telegraph announced the fact that peace had been concluded with China. On May 28 the Russian general Muravieff had succeeded in obtaining, by a treaty negotiated at Ai-joon, the cession by China to Russia of all the territory on the left bank of the Amoor. On June 13 Count Putiatine concluded a treaty of commerce and friendship with the Chinese plenipotentiaries at Tien-tsin. The same was done on June 18 by Mr. Reed, on the part of the United States, and on June 26 the more voluminous treaties of England and France with China were agreed upon, and obtained the signature of the emperor on July 3. By these different treaties China agrees to open 4 more ports to foreign shipping, also to open the navigation of the Yang-tse-kiang to all nations, to allow foreigners to travel in China, to recognize ministers resident accredited by foreign powers near the court of Pe-king, to tolerate Christianity, protect Christian missionaries, and to refund the expenses of the war ($16,000,000 to England, $6,000,000 to France). The treaty negotiated by Mr. Reed contains the provision that all favors accorded to other nations shall *ipso facto* extend to the United States, and thus America will equally share the benefits of these transactions. It is a significant fact that by the first article of the treaty, China claims the good offices of the United States in any future case of collision with other powers. It is generally believed that so far as regards the peaceful and profitable intercourse with China, the United States and Russia have obtained the greatest advantage from the complications of 1857-'8, at the smallest risk.—The movements of the rebels during these events had ceased to be considered as decisive of the fate of the Chinese dynasty. In June, 1858, led by She-ta-kai—the last remaining of the 4 kings under Hong-siu—they made an unsuccessful attack on the city of Su-chao, defeated the opposing forces near the pass of Tao-han, and marched upon the city of You-kiang. It was rumored at this time that Russia, in consideration of the cession by China of the Amoor country, had promised to assist the imperial government in finally putting down the rebellion.—The emigration of Chinese to foreign countries exhibits a remarkable increase within the last 10 years. From 1849 to 1857 about 75,000 emigrated to California, where the
Chinese population is at pre
ted at 52,000. In Chili t
Chinese; in the French colony
1, 1858, 451; and in fact we find
tered now over many other parts
This exercises a marked influence upon th
lization of China, considering t
emigrants return to their native
duce other Chinese to emigrate, or
into China the arts, the industry, and th
of thought which they have practised
served abroad.—See Morrison, "View
Macao, 1817; J. F. Davis, "Description
Lond. 1836; S. Wells Williams, "The
Kingdom," London, 1841, New York, 1
Gützlaff, "China Opened," Lond. 18
Meadow, "The Chinese and their Re
Lond. 1856; J. F. Davis, "China: a
Description of that Empire and its Inh
Lond. 1857; R. Fortune "A Residen
the Chinese," Lond. 1 Huc. "
in China," Lond. 1857; C.
China," Lond. 1857; O. Olipl
1857; George Wingrove Cooke, "China:
the 'Times's' Special Correspondent
China in the years 1857-1858," 1
(See Chinese Language and Literat

CHINA SEA (Chinese, *Tung-hai*,
sea; Fr. *Mer Orientale*), that portion of
cific ocean which extends betw
Siam on the W., the Philippine
E., Borneo on the S., and the i
on the N. It forms the gulfs
quin. The Me-kong, Cambod
rivers empty into it, and Canton,
Singapore are the principal ports on

CHINA WARE. See Porcelain.

CHINCHA, or Chinca Islands, a
3 small, arid, and rocky Peruvian isl
Pacific, about 14 m. off the coast of lower
lat. 13° 38′ S., long. 76° 28′ W., ce
their valuable deposits of guano.
to have been formed by separate
of lava under great pressure, probably
bottom of the ocean, and are comp
dull white and reddish colored rock.
places rising perpendicularly 300 f
the sea. The beating of the waves
rush violently into the innumerable c
arches, sometimes 100 feet high, wh
forate these cliffs, and the multitudes
guins and other sea-birds which cir
their nests on the rocks, render the
of these islands singularly wild and pic
They were visited in 1853 by Mr. Ge
Peck, who states the height of the ro
dle island to vary from 150 to 200 o
On this the guano lies in a mound
about 160 feet deep in the centre,
ted like a honey-comb with the vast n
nests of small birds, much like blue
but more lightly formed, which fre
island in flocks large enough to co
acres. At the time of Mr. Peck's v
were 114 vessels here, either loading
ing their turns. The labor was perfo

coolies, overworked and cruelly treated. Neither of the islands extends more than a mile. Chincha, the chief of the group of islands bearing that name, is supposed to contain 17,000,000 tons, and the other islands about 25,000,000; total, about 42,000,000 tons of guano. (See Peck's "Melbourne and the Chincha Islands," New York, 1854.)

CHINCHAYCOCHA, a lake of Peru, one of the largest in South America, about 35 m. long, 7 m. wide, and 13,000 to 14,000 feet above the level of the sea. The N. W. extremity is in lat. 10° 42′ S., long. 75° 40′ W. The principal branch of the Jauja, one of the largest tributaries of the Ucayale, issues from this lake. The Indians entertain the superstition that it is haunted by fish-like, monstrous animals, which prowl during the night about the adjacent lands to devour the cattle.

CHINCHILLA, a little animal of the family *chinchillidæ*, and order *rodentia*. The family is defined by Mr. Bennett, to whom the world owes most of that which is known concerning this species, as follows: Upper incisors simple; molars $\frac{4-4}{4-4}$, consisting of 2 or 3 tænial or ribbon-like lamellæ or plates, parallel with each other, entirely surrounded by a vitreous substance; the crowns exactly opposite to each other, and flattened by attrition. The posterior limbs are nearly twice as long as the anterior. The tail, produced, has long and bristly hairs about the tip and on the upper side. The chinchillidæ are gregarious and subterranean in their habits, and mild in their disposition. Mr. Waterhouse, in his "Natural History of Mammalia," makes the chinchillidæ a sub-family of the family *hystricidæ* of the rodentia. It embraces the following genera: LAGIDIUM, LAGOSTOMUS, CHINCHILLA. I. LAGIDIUM (*lagotis*, Bennett). Incisors $\frac{2}{2}$; molars $\frac{4-4}{4-4}=20$. The incisors are sharpened, and each molar consists of 3 complete oblique plates. Skull arched posteriorly and above; the superior cellules of the tympanum are inconspicuous. All the feet are 4-toed, the great toe being entirely absent; nails long and subfalcular. Ears very long; tail long; fur soft but caducous. Of this genus there are 2 species, the *lagidium* or *lagotis Cuvieri*, and the *lagidium* or *lagotis pallipes*, being, it is supposed, the viscacha of all the writers from Pedro de Cieça downward, who have stated that animal to be an inhabitant of the western or Peruvian slope of the Andes. The animal is about the size of the hare, which is wanting to the fauna of Peru, Chili, and Ecuador, and appears to be equivalent in those countries to that creature and to the rabbit, among which it has been classed by some writers, especially Lesson, in his *Manuel*, who has apparently confounded the eastern and western species, *lagotis* and *lagostomus*, and who gives it as the *lepus viscaccia* of Gmelin. This animal breeds among rocks and stony places, burrows in the ground, and is famous, if mortally wounded and not killed at once, for taking refuge in its burrow and dying within it, so as to be lost to its pursuers. Its fur, which is longer and softer than that of the rabbit, has the peculiarity of falling out so soon as the animal is dead, which renders the use of the skin as fur impossible. The Indians, however, according to Pedro de Cieça's *Cronica del Peru*, published in 1554, used to "make large mantles, cloaks, or blankets out of its hair or wool, as soft as silk, and very valuable." Molina, also, whose work, first issued in 1782, was reprinted with additions in 1810, speaking of its use among the ancient Peruvians, as mentioned above, says that the Chilians of his time used it in the manufacture of hats. Von Tschudi, in his *Fauna Peruana*, confirms most of these particulars. II. LAGOSTOMUS. Incisors $\frac{2}{2}$; molars $\frac{4-4}{4-4}=20$. The incisors are sharpened; the molars each consist of 2 complete oblique lamellæ, the upper posterior one being tri-lamellar. Anterior feet 4-toed, the thumb being altogether deficient, the nails small and falcular; posterior feet 3-toed, the nails produced, straight, and robust. Ears moderate; tail moderate. Of this genus there is but a single species, the *lagostomus trichodactylus*, which is also given as the *callomys viscacia* by Geoffroy and D'Orbigny. It is the *dipus maximus* of De Blainville, *la viscache* of D'Azara, and the marmot Diana of Griffiths, translator of Cuvier's "Animal Kingdom." It is the viscacha of the vast plains eastward of the great chain of the Andes; and is, lastly, the biscacho so quaintly described by Sir Francis Head, in that delightful work, "Rough Rides across the Pampas," as sitting solemnly at the mouths of their burrows. These burrows, known in those regions as *biscachueras*, are said to be the most dangerous impediments to the horseman who crosses the wide plains or pampas frequented by these beasts (which are said by some travellers to be between the rabbit and badger in appearance, although the structure of their hinder extremities resembles that of neither of those animals), since, if the half wild horse which he rides, knowing no pace but the walk and the gallop, gets the fore feet entangled in these dangerous labyrinthine holes, when going at the latter pace, a heavy fall is the necessary consequence. Like the prairie dog of the North American prairies (*arctomys Ludovicianus*, Gmel.), the biscacho has, as joint companion of his burrow, a small species of owl, which sit in vast numbers at the mouths of the holes during the daytime, staring with ludicrous gravity at the passers by. It is not stated whether, like the prairie dog, the biscacho also associates to himself, whether voluntarily or involuntarily, that still more anomalous and incongruous companion, the rattlesnake. Nothing is more curious or interesting in natural history than to observe how, in like situations, the same lack of natural facilities drives animals of the most different kinds to the adoption of the same habits, also the most widely variant from their natural instincts. It is, doubtless, the want of trees on the vast shrubless prairies and pampas of North and South America, whereon to breed, and

their own inability to burrow, that drives the owls to consort with the marmots and rattlesnakes in their holes; a similar want of steeples or tall crags, which are the favorite nesting places of the jackdaws (*corvus monedula*) and choughs (*corvus graculus*) of England, compels both of these birds, in the sandy plains in the south-western counties, to adopt rabbit burrows as their breeding places; and the sheldrade duck (*anas tadorna*) to the same singular resort. III. CHINCHILLA. Incisors $\frac{2}{2}$; molars $\frac{4-4}{4-4}$ $=20$. The molars generally consist of 3 complete oblique plates, except the anterior lower molar, which has but 2 lamellæ, the anterior lamella being deeply bilobated. Skull posteriorly retuso-truncated, above depressedly flattened; cellules of the tympanum conspicuously inflated. Anterior feet 5-toed; posterior feet 4-toed, the nails small and subfalcular. The ears ample; the tail rather long. This is the well-known fur-bearing chinchilla, the skins of which are so much used in the winter dress of ladies. There are 2 species of this genus, *C. lanigera* and *C. brevicaudata* (Waterhouse); the former, to which the following remarks particularly apply, peculiar to Chili; the latter, somewhat larger, coarser, and less known, to Peru. The length of the body of this beautiful little creature is 9 inches, and that of the tail nearly 5. Its proportions are close set, and its limbs rather short, the posterior being considerably longer than the anterior. The fur is long, thick, close, woolly, somewhat crisped and entangled together, grayish or ash-colored above and paler beneath. The form of the head resembles that of the rabbit; the eyes are full, large, and black, and the ears broad, naked, rounded at the tips, and nearly as long as the head. The mustaches are plentiful and very long, the longest being twice the length of the head, some of them black, others white. The tail is about half the length of the body, of equal thickness throughout, and covered with long bushy hairs; it is usually kept turned upward toward the back, but not reverted as in the squirrels. Mr. Yarrell, who dissected one that died in the menagerie of the zoological society in London, has given the best account of it in the "Proceedings" of the society; and while he points out that in the possession of an extra toe on each of the feet, it requires the generic distinction claimed for it by Mr. Bennett and Dr. Gray, he adds that the resemblance of the skeleton to that of the jerboa is also remarkable, particularly in the form of the head, the excessive development of the auditory cavities, and the small size of the anterior extremities compared with the hind legs. Although an extensive trade has been carried on in the skins of this interesting little animal, it is only within a few years that it has been seen alive in England, and it is doubtful whether one has ever been brought to this country. The earliest account of this animal is to be found in a translation, London, 1604, of Father Joseph Acosta's "Natural and Moral History of the East and
West Indies," published at
in Spanish: "The chinchill
of small beasts like squirrels;
derful smooth and soft skin,
natives) wear as a healthful thi
the stomach and those parts tha
a moderate heat." Sir John Haw
"Voyage into the South Sea, A.
London, reprinted in "Purchas his
says: "Among others they have lit
like unto a squirrel, but that he is
skin is the most delicate, soft, and
that I have seen, and of much
is reason, in Peru. Few of th
Spain, because difficult to be come b
the princes and nobles lay wait for
call this beast chinchilla, and of
great abundance." Molina sta
in burrows underground, in th
of the northern part of Chili, and
of being in company with others of
It feeds upon the roots of vari
plants, which grow abundantly in
and produces twice a year 5 or 6
It is so docile and mild in temper,
into the hands, it neither bites nor
cape, but seems to take pleasure in
ressed. If placed in the bosom, it
as still and quiet as if it were in
This extraordinary placidity may
rather due to its pusillanimity.
it extremely timid." Mr. B
paid much attention to the
menagerie of the London zool
says: "To the account of its h
Molina, we can only add that it
its haunches, and is even able to
and stand upon its hinder fe
sitting posture, grasping its foo and
it to its mouth by means of its fore
breeds freely in confinement, the o
the zoological gardens, Regent's
having produced 7 young ones.

CHINCHILLA, a Spanish city, i
and 10 m. from the city of Alba
1852, 7,465. An ancient wall, the
former fortifications, surrounds the
contains an old castle, a handsome
several chapels and convents, a pr
theatre, barracks, cemetery, poor-
and primary schools. There are va
factures, and trade in cotton, woo
fruits, &c. Quarries of granite,
sum, and limestone are wrought

CHINENDEGA, two contiguous
caragua, Central America. NEW
stands in a fertile plain about 9 m.
It is a depot for the trade of
the interior. Pop. from 8,000 to
of OLD CHINENDEGA, 3,000 or 4,
the existence of the Central Ame
eration the congress met at Chine

CHINESE LANGUAGE AND
TURE. The Chinese is the principal
the monosyllabic family of la
together original, and di

with scarcely any foreign admixture. Apparently most imperfect, it is, on closer inspection, a type of logical precision. An organic living agent, witness, and monument of the life and actions of the most populous group of humanity during 40 centuries, it has been to its admirers or contemners the subject of the strangest exaggerations and most chimerical theories. Some even speak of two Chinese languages, a spoken and a written one, independent of each other; an assertion apparently supported by the contrast which the poverty of the former presents to the exuberance of the latter. In fact, when compared with the Chinese system of writing, the Chinese speech consists of very few syllables, commonly called words.—When in the following survey no dialect is named, the *kuan-hoá*, or mandarin language, as it is called by the Portuguese, is to be understood. Callery counts 815 Chinese words, Morrison 328, Barrow 342, Endlicher 450 with 680 modifications, Prémare 1,285, Rémusat about 4,000 refined shades (*nuances*), of which about 1,200 can be written by us; other sinologues vary between 1,200 and 7,000; in the Canton dialect there are 646, in the Amoyan 840.—As the graphic system is not hieroglyphic, or symbolic, or syllabic, or alphabetic, or lexigraphic, but ideophonographic, we shall, in order to avoid misconception and for the sake of brevity, call its characters *sinograms*. All syllables (words) begin with a consonant, or with a peculiar hiatus or aspiration, which is indicated by *ng* or *g*, or by the Greek breathings, both asper and lenis (‘’); and they end either in a pure vowel or in a strong nasal, written n, or a weaker one written *ng* (by the Portuguese *m*), sounding almost like French or Portuguese nasals. By harmonizing the Portuguese, Spanish, English, German, and Russian modes of transcription with the Mantchoo method and with the Fan or Indo-Chinese phonetic system (attributed to Shin-khi, a Buddhist priest, 5th century A.D.), as applied to the *kuan-hoá*, we obtain 36 characters and sounds for initials and 45 for finals. The former are divided into 9 classes: gutturals, dentals, hard and soft labials, sibilants, palato-dentals, aspirates, semi-vowels; the latter into 24 sonorous (12 fundamental, 12 augmented by a preceding *i*) and 21 obscure final vowels (11 fundamental, 10 augmented). Without further detail we give summarily our mode of transcription, thus: *k*, *t*, *ch*, *p*, *f*, *ts*, *h*, *n*, *m*, *y*, *l*, *s*, *sh*, pronounced as in English, *tsh* (stronger than *ch*), *ss* (stronger than *s*), *j* (half-way between English and French), *w* (almost as in English), *g* (the above *ng* or ‘’), and *kh*, *th*, *chh*, *ph*, *fh*, *tsh*, *tchh*, as in the English compounds in*kh*orn, po*th*ook, ha*ph*azard, &c., but uttering the *h* in one emission after and joined to the preceding consonant, and not as in *theatre*, *philosophy*; or pronouncing the *sh* as a neutral sound, as in *shall*, in the *tsh*, but all the 3 consonants audibly, as we would do in English in the compound word ra*tsh*ole; the vowels, diphthongs, and triphthongs (such as *ao*, *ei*, &c., *iao*, *wei*, &c.) clearly, in 1, 2, or 3 sounds, as in Italian and Spanish. Finer distinctions, as for instance those of the French *e muet*, the German ü, the Russian dull *y*, and others, we must pass by, and be content to notice the most protean transcription of a peculiar syllable, sounding almost like the English word *earl*, by *ulh*, *ul*, *lh*, *urh*, *olr*, *rr*, *eul* (ŏl), *rh*, *el*, *ell* (signifying *and* and *son*). The pure *r* is entirely wanting and replaced by *l*; thus, *Ki-li-sse-tu* instead of *Christus*. Many sounds are unscribable, though attempted by Europeans, such as the *bw*, *jw*, *lw* of some dialects, &c. Our sounds *b*, *d*, *v*, *z*, pure *g*, are wanting. The pronunciation is called *tche-yen* (letter-sound), and varies in the different parts of the empire. Aspirations predominate in the north, intonations (almost singing) in the south.—The *yen* (sound) is distinct from the *shing* (tone), which latter is more readily distinguished by a Chinese than consonants. Tone-marking is also due to the Buddhists. There are 4 tones (*see shing*), and by a division of the *phing*, ’*u* makes a 5th, viz.: 1, *phing* (even, plain), with prolongation, and either *tshing* (clear) or *cho* (full), a musical octave apart, the former marked (-), the latter (ˆ) by Europeans. The other 3 are *tse* (deviating), especially 2, *shàng* (ascending), 4 notes above *phing*, marked (`); 3, *khiú* (progressing, departing), 4 notes below the *phing*, marked (´); 4, *ji* (reëntering), a sudden breaking off of the sound, marked (˘). The Chinese mark them by enclosing the sinogram in a square, and placing a semi-circle at the left lower corner for *phing*, at the upper for *shàng*, at the right upper corner for *khiú*, at the lower for *ji*. The abrupt tone (*ji*) is replaced by the *phing* in Pe-king. Some words have but one tone, as ’*ĕng*, hard; *jŭ*, flesh; *wĕi*, thing; many have 2, as *shuà*, play; *shuă*, broom; some have 3, as *fāng*, square, place, rule; *fàng*, trial; *fáng*, relaxation; some 4, as *mā*, hemp; *mà*, horse; *má*, contention; *mă*, to put in a row. The tones sometimes distinguish parts of speech, such as *shâng*, above, *shàng*, to ascend; *hià*, below, *hiá*, to descend; *niù*, woman, *niú*, to marry. The most frequent sounds are: gutturals (107), sibilants (104), aspirate initials (76), and aspirations after *t*, *p*, *k*, *ch*, &c. (about 160); the finals decrease in frequency from *u* (26) through *i*, *ian*, *ie*, *iao*, *in*, *ian*, *ing*, *e*, *ei*, *ai*, *ua*, *ue*, *eu*, to *iei* (1). Syllables of most frequent occurrence are: *che*, *chu*, *fu*, ’*i*, *ki*, indicated by about 40 phonograms each; while rare ones, such as *nung*, *hen*, *yang*, have but one.—The number of sinograms is 33,000 in the *Tse-wei* dictionary; 43,496 in Emperor Khang-hi's, which is official (about ¼ obsolete, more than ⅗ rarely used, or mere varieties, faulty, or proper names); in Sse-ma-kuang's 53,165; in Morrison's 50,000; Magaillans counts 54,500, De Mailla 80,000, Montucci 260,899; some even go up to 412,000. The historiographers of the Han were required to know 9,000; in the 4 sacred books there are about 2,450 (with the other 5 canonical books, together 4,600); the present savants employ about 3,000; the law code, translated by Staunton, contains scarcely 2,000. Buddhist bonzes added about

27,000. One syllable, being employed to express many, often very discrepant meanings (thus *sse*, 4, likeness, to give, to send, business, thing, to wait, temple, magic, &c.), is necessarily represented by many characters. Nevertheless, there are many words of a specific signification for which other languages lack words. The principal words are often phonograms.—Originally, after events had been recorded by knotted cords (not unlike the Peruvian *quipos*), writing proper began, like the Egyptian, with *wen* (images, forms of visible objects, ornaments); the *pa kua* (8 diagrams) of Fu-hi (described below in our observations on the literature) being too mysterious. He, or Hoang-ti, the 3d sovereign, or Tsang-kie, a statesman (about 2700 B. C.), or one Pau-she, are the legendary inventors of the *kho-teu* (tadpole) and *niaò tsi-wen* (bird-track script), consisting of undulating marks. The historic *ku-wen* (ancient script), imitative of natural forms, are found on stones and metallic vases, and are the prototypes of the subsequent sinograms, the mass of which has been comparatively recently distributed into *lu shu* (6 books, or modes of writing), to wit: 1. *Siang-hing* (copy of form), or iconograms, as sun, moon, tree, fish, hill, &c.; between 200 and 600 in number. 2. *Tchi-sse* (thing-signs), for shapeless things, as above, below, amid, number, &c.; about 110. 3. *Hoei-'i* (combined sense), by several images, such as sun-moon, meaning light; mouth-bird, meaning song; water-eye, meaning tear; door-ear, meaning to hear; man-hill, meaning hermit; woman-hand-broom, meaning wife; heart-death, meaning oblivion; heart-whole, meaning attention; word-lick, meaning to flatter; hill-speak, meaning to boast; door-log, meaning obstruction; pencil-speak, meaning book, to write; mouth-in-door, meaning to ask, &c.; about 740, many of them having a phonogram. 4. *Chuan-chu* (antithetic signs), such as, up to down, right to left, man to corpse, &c.; about 370. 5. *Kià-tsie* (borrowed signs), metaphoric, symbolic, by association of ideas; thus, squinting-eye, meaning white; sprouting-plant, meaning to grow; 2 clam-shells, meaning friends; child-under-cover, meaning written character; heart for affection, house for man, hand for artist, &c.; about 600. 6. *Hing-shing* (form-tone), real characters, composed of a phonogram and an ideogram. Some images were chosen for sound-signs (phonograms) by losing their meaning, but imparting their sound to an associated ideogram, which in its turn loses sound, and refers the sounding word to the category it belongs to. Thus, ship (the 137th classific, see below), pronounced *tcheu*, imparts this sound to the following ideograms, which determine the special signification of the plurisignificant *tcheu*. With water (85), it signifies basin; with speech (149), garrulity; with fire (86), flickering; with feathers (124), down; with silk (120), silk cover; with fish (195), a certain fish, &c. Out of 24,235 sinograms, 21,810 belong to this ideophonetic class. The pronunciation is not always certain, as the

sounds of many phonograms, or of th
nations, have been altered with
similarity of the sound of most
have the same phonogram, fac
ing, but not much the underst
The multitude of phonogra
Callery's *Systema Phoneticu*
derfully promoted sinology, it
means faultless.—Since the mea
isophonous characters belongs to di
gories of ideas, some were chosen
categories. Thus the syllable *tcheu*, w
the sign of city and not of ship, ser
phonogram to the following ideograms
ter, signifying inhabited island; to
fic 164), meaning to pledge in drinl
to speech, meaning to answer; to
meaning call of birds; to silk, m
smooth; to plant, meaning a kind
This same syllable, written with the
of about, all, signifies, with water, a
with mouth, a jest, bird's song; with
stagger, &c. Beside the fitness of th
the fitness and elegance of both el
combination decide the choice of
the Chinese being very punctilio
graphy. Some of the *hing-shing*
phonograms; thus *tung* (consistin
tung, and of the ideogram of
mouth, means to speak much, to
Most phonograms retain their sou
only with certain ideograms. Thus
of a cubit, 41st classific). with knife
sific), means to cut off,
to consider; with tree,
same pronounced *cheu*, used w
colic; with wine, it means brandy.
nounced *sheu*, with roof (40th cla
to preserve; and *thao*, with sp
Some account is also made, in com
the sense of phonograms, as well as
ogy of their finals; thus, of *hiao*, *jao*,
shao, &c. Some *hing-shing*, whose
change the sound, are used as new
for instance, the phonogram *shu*
the classific knife, produces *la*, mea
This compound character becomes in
phonogram *la*, meaning, with the c
ness (104), to be sickly; with jewel
'iu), meaning jewel; with hand (c
meaning to crush, &c. Beside the
sounds, mere license brings about
tions. Some sinograms may be exp
as *hoei-'i* or as *hing-shing*; thus *tao* (
fish, means swordfish; *tao*, with
long-boat; *jin* (man), with fish,
(child) and child mean twins;
child's cry; *hüan* (little ball) and
to weep; *tchha* (fork) and water
fluent; *tshha* and hand mean h
and tree mean branch, &c. Out o
ment of simple and of compound
phonograms, arose particles with
functions. The writing of the illite
writing of the Japanese come from
source. It is thus that the Chinese a

write foreign names; as for instance, *Eu-lo-pa*, *'Ia-si-'ia*, *'Ia-me-li-kia*, *Ji-pen*, *'Ing-ki-li*, *Mu-sa*, *Mo-han-mi-te*, *Ya-su-hoei-see*, &c., for Europa, Asia, America, Japan, English, Moses, Mohammed, Jesuit, &c. The transcription of the geographical names for the regions north of the great wall was fixed by a decree of Khian-lung in 1772. A vertical stroke, or the character of *khei* (mouth), near a character, or the insertion of the characters within lines (called in French *cartouche*), denotes the mere phonetic value. This last method was also employed by the Egyptians for the same purpose. Mantchoo words and the pronunciation of Chinese characters are indicated as follows. Suppose the sound of the sign for mouth is to be represented: the character of mouth is first written, then the phonograms of *khu* and of *'eu*, and after them the phono-ideogram *tshie* (divide); which means, take *kh*, the initial of the *khu*, and *eu*, the final of *'eu*, and you obtain *kheu* (mouth). If we wished to indicate in the same way the pronunciation of *γap* by English words, we should write "*γap*, go, far," and subjoin "Divide;" which would mean, take *g* of go, and *ar* of far, and join them into *gar*.—The monosyllabic language of the Anamites (in Cochin China), a Chinese dialect, uses sinograms so modified, that though the Anamites can read them, the Chinese cannot do the same with Anam sinogram writing. Most Coreans also read Chinese, but have a syllabary for their own language like that of Japan.—The ideograms denote the category of ideas expressed by the annexed phonogram, and are therefore called classifics by Callery (*pu-sheu*, class-heads), and by others, wrongly, keys, radicals, tribunals, generic. The symbolism or analogy, by which the category is indicated or suggested, is often obscure or merely dialectic, provincial, or local. Thus the *pu* of *mĭ* (silk, 120th) refers also to thread, dress, ornaments, bandage, books, genealogical tables, and in general to things made of silk; *kuei* (194th *pu*, demon) also signifies manes, spirits, monsters, hobgoblins, constellations, superstition, and the like; the *pu* of *niü* (woman, 38th) heads the category of beauty, softness, mildness, affections, voluptuousness, grace, &c.—The number of *pu-sheu* has varied with time and in various dictionaries, between 88 and 707; 540 in the most ancient known dictionary, *Shu-wen* (A. D. 150), where ideophonograms are already explained; 214 in the dictionary *Tshing-tse-tung* (16th century A. D.), and in the order now used for the first time in Mei-ing-tse's *Tse-wei* (A. D. 1615). Among the now generally adopted 214 classifics (which Gonçalvez reduced to 127), 169 are ideograms, or leaders of categories, 108 also serve as phonograms, and some are only graphic elements. Their position in compound characters varies according to their employment as ideograms or as phonograms, and the shape of some is altered by calligraphic exigency; however, they most frequently stand on the left of phonograms, though sometimes above, or below, or around, or within them. Thus ship, as a classific, stands on the left of the phonogram *fu*, fishing boat, &c., but as a phonogram always on the right of the ideogram. When both signs are both ideograms and phonograms, the former occupies, generally, its normal position. The lexicon decides in cases of doubt. Callery divides all sinograms into 3 classes (phonetics, classifics, and compounds of both), contends for the preëminence of the phonograms, calls them primitives, and arranges the most usual sinograms under 1,040 fundamental letters, as he calls the phonograms. The sound of some primary phonograms is altered according to certain laws; thus, *kan*, *chan*, *'ien*, *tsan*, *pi*, become respectively *kien*, *chen*, *'iuen*, *tsiang*, *pei*, &c. The present Chinese avow themselves to be intellectually inferior to their ancestors, who knew the sounds of their *wen*, prior to the great burning of books (215 B. C.). There is a Chinese "History of Writing," published under Khian-lung (1736–'95), in 80 volumes, whose contents have as yet been but little examined. The new characters ordered annually by the emperors are mostly ephemeral. A system by Pau-she divided 479 *shu-mu* (book-eyes, or classifics) into 9 sections, to wit: 1, simple signs; 2, celestials; 3, terrestrials; 4, human things; 5, movables; 6, vegetables; 7, artificials; 8, miscellaneous; 9, double kinds, or unclassifiable.—The sinograms are classified by the number of *hua* (strokes), of which 6 are commonly counted, viz.: horizontal, vertical, leftward and rightward slanting, a hook of 13 varieties, and a club-like stroke ('); though Gonçalvez finds that there are 9, others only 8. The greatest number (52) of strokes is found in *pung* (noise after a great peal of thunder), written with 4 times rain (173d classific) and 4 times field (102d). *Kheü* (rich) is written with a complex of 4 ideograms superimposed, viz.: roof (40th), one (1st), *kheu* (mouth, 30th as a phonogram), and field. The 214 classifics are arranged, in the lexicons, according to the number of strokes, in 17 sections, viz.: of 1 stroke, 6; of 2 strokes, 23; of 3, 31; of 4, 34; of 5, 23; of 6, 29; of 7, 20; of 8, 9; of 9, 11; of 10, 8; of 11, 6; of 12, 4; of 13, 4; of 14, 2; of 15, 1; of 16, 2; of 17, 1. Of the heads, 49 never occur alone, and about 40 are scarcely ever classific. As to signification, they are of the following general categories: 4 of number; 22 of qualities; 5 of position, residence, place; 10 of different parts and regions of the world; 11 of meteors and physical phenomena; 28 of implements; 5 of minerals; 15 of vegetation; 19 of animals; 27 of parts of the animal body; 33 of actions; the remainder miscellaneous. The accessory parts of compounds form subdivisions, also by the number of strokes.—Sinograms which cannot be easily found are put into a list, *kian-tsé* (examined letters), as in Klaproth's supplement to Glemona and De Guignes. Some *pu* head a great army, others have but few retainers. In the *Tse-wei*, out of 33,000 characters, 19 contain more than $\frac{1}{3}$ of all sinograms; 33 more than $\frac{2}{3}$; 60 scarcely $\frac{1}{10}$. The

richest *pu* are: the 140th, *tshaò*, vegetable, 1,431; next the 85th, *shùi*, water, 1,354; then the 75th, *mŭ*, tree, 1,242; the 64th, *sheù*, hand, 1,030; the 30th, *kheù*, mouth, 989; the 61st, *sin*, heart, 972; the 38th, *niù*, woman, 834; the 149th, *'ian* (or *gnin*), speech, 750; and so down through man, gold, bamboo, silk, bird, flesh, mountain, eye, &c.; while the 6th, *khiuĕ*, hook, the 136th, *chhuan*, contrary, lead each but 8; the 34th, *chi*, to follow, the 83d, *shi*, family, the 166th, *li*, mile, the 192d, *tchhang*, aromatic plant, each have only 7; the 95th, *hiuan*, sky, only 6; the 138th, *ken*, limit, merely 5. Gonçalvez tried an ingenious arrangement, whereby the classifics might be easier recognized from position, but without success. As the physiognomy of the ideograms does not betray their meaning, a natural arrangement according to isophonous terminations has been usefully employed since the remotest antiquity.—The graphic system having been slowly and (during the division of the empire) independently developed in the provinces, the multiplicity of characters was complicated by a want of uniformity, and even of analogy. Many kinds of analyses have been fruitlessly attempted with a view of finding a key to the theory of the construction of the simple signs. Marshman, and recently Schott, may be mentioned among the host of analyzers. The Jesuit missionaries endeavored to demonstrate biblical history, prophecies, and the mysteries of faith from many sinograms; for instance, a ship with 8 and mouth, as indicating the ark of Noah containing 8 persons; 2 trees above a woman (concupiscence), as Eve between the trees of life and of the knowledge of good and evil; a lamb and heart (sadness), as the lamb of God whose soul is sad unto death; upon and 9 (perverse), as Lucifer over the 9 choirs of angels; 3 strokes with 1 and rice (vital air), as the great One and Three in one, &c. From natural pictures arose symbolic, metaphoric, and arbitrary signs, with almost no resemblance to the former. From the above-mentioned *ku-wen* were derived (as to their form) the following and other styles of writing: 1. *Tà-chhuán* (great-transmitted), attributed to Shi-tcheu, historiographer of Tcheu-siuan-wang (B. C. 827–785); stiff, angular; found on ancient coins, seals, vases, and still employed in prefaces and titles. 2. *Siaò-chhuán* (little-transmitted), in use from Kúng-fu-tsé (Confucius, B. C. 600) down to the Han (B. C. 207), and yet used in titles and inscriptions. 3. In consequence of the spread of writing, and during the division of the empire, as well as owing to the introduction of silk and linen as writing materials, by means of wooden styles the *li-jin* (public scribes) introduced the thick, symmetrical, little connected *Li-shu* (official book or script), under the Han. 4. The invention of paper and the use of the pliable painting brush gave rise to the elegant *Kiai-shu* (light book), devised by Sse-tchang, under the Tsin (3d century A. D.). This is the pattern style, rarely used in print, but, together with
the next, most frequently emplo
script, being called *hing-shu* (w
for prefaces, memoranda, and ev
5. Since the Han, the *Tshaò-shu* (n
erroneously called grass-writing)
currency as a cursive style. The e
of characters being much abridged, an
es indulged in at the caprice of writ
the most puzzling handwriting
6. The common book style, named
troduced by Lieu-te-shing, under the
century A. D.), soon after the in
block types; more square, stiff, an
than the *Kiai*. Although 72 style
have been in use under the vari
the Mantchoo-Chinese poem of *Tai-*
tsung (*Éloge de la ville de Moukden,*
Kien-long, empereur, &c., traduit
Amiot, Paris, 1770) contains only
(transmitted or old letters). The
tures of most sinograms have, how
gone little alteration. Some have b
tionally changed, ideograms and
have been mutually substituted,
tching (exact), *kiai*-like characters are
1, the *sú* (vulgar, current), with slight
or omissions; 2, the *seng* (abridged)
light literature; 3, the *'ó* or *'ú* (fault
(bad) forms. Klaproth gave the
vion faults) as a supplement to Gl
Guignes. Substitution of classific
grams, and variation in the grouping,
to some extent, sanctioned by authorit
tsé (identical letters, perfect synon
ther syngrams) may be used at will
other; they are either homolo
the same phonogram, or the
various phonograms, or different
the same elements. Thus the signs
and mouth; of eye and to see; of tree
herb; of earth and hill, clay, mou
field; of bird and hen; of foot and to
are exchangeable, being of analogous
A sort of metonymy called *thung* (co
tion) affords a wide field for the sub
even diverging characters; thus,
the mouth of a corpse with jewels, a
tain) can be written with another p
han only in the sense of to eat, the
ceiving the addition of mouth. Th
grams *lin*, with eye, meaning to lo
eyes, and *lin*, with jewel, meaning be
be interchanged. The most ancient
considered as the *pen* (root) form, is
lete for many sinograms. Many hav
the side of their *kin* (new) form,
Klaproth gave a table of *tsun-shi* (r
of times), with one of the obsolete elem
another *kù-kin thung-yúng* (new-old
ing-use), with both elements affected.—
writing proceeds from right to left in
umns, or horizontally where the w
requires it; but in Mantchoo-Chi
it runs from left to right. Sir John
(*Eugraphia Sinensis*) gives a part of th
writing ("Transactions of the Royal

ciety," 1837, vol. i.). On this subject Bridgman's "Chrestomathy" may also be consulted.—The *tsü-yen* (pronunciation of the characters) varies in different parts of the empire among the common people; but there are 3 principal dialects, affecting the idiom itself by peculiar phraseology. Were they not united by the graphic system, they would constitute almost as many languages. 1. The *kuan-hoá* (common speech), miscalled *lengua mandarina* (Portug. *mandarin*, officer, functionary; *mandare*, to command, order), the Chinese proper, the language of the court, of high officers, of polite and learned persons in the whole empire, and vernacular in the *chung-küŏ* (middle kingdom: Ho-nan, Ngan-hoei, Shan-tung, Pe-che-li, Kiang-su, with Nan-king, or the south metropolis). It is euphonious and easy when compared with the others; with more liquids and labials than the others possess; more guttural on the coasts of Kiang-su and Che-kiang; more diffuse than the terse *ku-wen*, and also more diffuse orally than in writing. It is understood by the learned in Japan, Anam, &c. The princes of the blood and other high personages also speak Mantchoo, and the people of Pe-king differ somewhat in speech from those of Nan-king. 2. The *Kuáng-tung ssŭ-hoá* (Canton vulgar speech), or *pak-wa* (plain speech) of Kuang-king (both Kuang-tung and Kuang-si), more intelligible to the northerners than the 3d dialect described below; poor in literary works; containing the sounds *b, d, g, dz*; using *w* instead of *m*; interchanging *ch, tch, ts* in some districts. Words with the *jĭ* tone take a final *t, p*, or *k*. Baptize, stairs, impregnable, are pronounced *papitaits, sz'-ta-sz', im-pi-luk-na-pu-li*, &c. The final *ng* is uttered with a singing modulation. The speech of Macao, and still more that of the district of San-on (opposite the island of Hong Kong) differ from the above described, and in fact are sub-dialects of it. 3. The *Tshiang-tcheu ssŭ-hoá* (Chin-cheu vulgar speech), or dialect of Fu-kian and its islands, as well as of a part of eastern Kuang-tung, and of many parts of southern Asia, to which the Fu-kien-lang (Chincheos) have emigrated. The port island, *Hia-men* (sea-door, *vulgo* Amoy), in the territory of Chang-cheu, one of the capitals, and Fu-chu, the first capital, have each their own sub-dialects. There are also 4 others. All differ very much from the *kuan-hoá*, being nasal and hard, with many sounds which we cannot represent in writing, and with a different pronunciation of the characters. Many of these sounds are given differently in the colloquial and in the reading dialect, or dialect of polished men; in fact, the 2 form almost 2 parallel languages. On the coasts of Formosa there is also a most peculiar sub-dialect. The common Japanese pronunciation of sinograms is a modification of the Fu-kiannese, which, together with the Cantonese, is more akin to the languages of neighboring nations than the *kuan-hoá*. There are 8 tones, viz.: a *shàng* and a *hiá* (a high and low), of each of the 4 *kuan-hoá* tones (see above), with intervals of an octave. Medhurst gives the sounds of the reading dialect only. On the whole, the northern speech employs many aspirates, while the southern dialects delight in intonations, which are almost equivalent to singing. There are also some peculiar southern sinograms and bad variants; for instance, the 8th classific, *theu*, a mere graphic element, is employed instead of the 181st, signifying head, where this word is only an expletive of round things, as *jăt-tau*, sun, *discus solis* (see above), &c. These dialects differ so much, that northern functionaries need appointed *chhe-jin* (tongue-men, interpreters), to assist them in their duties. Before the Sung dynasty, each province had its own language. Kang-hi decreed that the *kuan-hoá* should be the official language of the whole empire. As there is little intercourse between the provinces, the Chinese not being fond of travelling, and as there are no scattered dwellings between villages and towns, there are also very many *tu-tan*, or *hiang-tan* (local or village dialects, *patois*), sub-dialects, and other variations, as in the Indo-Sinic peninsula, and at least (as Leyden says) 10 different languages, scarcely known to western glossologists. The exact limits of the chief dialects are also but vaguely known, and were not the empire bound together by the chains of the graphic system, it would be in constant danger of falling to pieces. Kämpfer ("Journey to Japan") mentions 3 languages in the 3 coast provinces, Fu-kian, Che-kiang, and Kiang-su. Du Halde speaks of that of Fu-kian. The Catholic missionaries confined their observations almost exclusively to the district about Pe-king. In the western provinces there are many half-savage mountaineers speaking languages different from the Chinese dialects, as the *Mau-lao* (forest rats), who are probably Thibetans; the *Miao-tse* of Kuei-chu, Ho-nan, part of Se-chuan and of Kuang-si, subdued in 1776; the *Lo-los* of Yun-nan, speaking Burmese; the *Hakkas*, in the N. E. of Kuang-tung.—We now come to the CHINESE GRAMMAR. The words being unalterable, there is no etymology in our sense of the term. Grammatical relations are indicated by particles, and the essence of grammar is altogether syntactic. The subject precedes the verb, which is followed by the direct and then the indirect complements. Modifying words precede the modified, governed substantives the governing verb, secondary propositions the principals. Personal pronouns, when they indicate the subject of the sentence, the substantive verb, or any other which is easily understood, are mostly omitted. In short, as much is left out as common sense can easily supply. Many words are made to serve as various parts of speech; thus, *ta* may mean either great, greatness, to magnify, or much. There are 2 classes of *tsé* (words): 1, *shi-tsé* (full words), verbs called *sing-tsé* (living words), and nouns called *ssè-tsé* (dead words), or *tsing-tsé* (resting words); 2, *hiü-tsé* (empty words), particles. Sentences are often joined in the manner of verses in songs. The *ku-wen* is full of ellipses, and yet the sense is clear; witness the *King* of Kung-tsé and Laó-tsé, and all books before the great conflagration. The spoken language is much more prolix. By the simplification of writing, the composition of words and particles became more frequent in the *kuan-hoá*, and still more so in the *siaò-shuě* (little talk) of novels, dramas, &c. The *wen-tchhang* (style-literary) is that of commentaries, history, and science, being very plain; while the *pán-wen pán-ssu*, used in lighter compositions, is as prolix almost as the colloquial. The composition of words is merely mechanical juxtaposition, by means of which the Chinese language becomes a rival of the languages commonly reputed as the richest. The *ku-wen* has few compounds. Ambiguity is often avoided by joining heterophonous synonymes; thus, *taò* and *lù*, each of which has 9 different meanings, agree in that of way, *taò-lù* signifying an imperial road. Compounds signifying estate and condition are made with *jin* or *fu*, man; *tsiáng*, wright, maker; *kung*, artisan; *sheù*, hand; for instance: *kung-jin*, bow-wright; *tcheu-jin*, ship-man (hand); *nung-fu*, plough-man; *shui-fu*, water-carrier; *mu-tsiang-jin*, wood-make-man, cabinet-maker; *shu-sheù*, book-hand, scribe, &c.; with *kia*, house, family, guild: *fang-kia*, receipt house, or *'i-kia*, heal-house, medical faculty, physician (also *'i-fu*, heal-man). Consanguinity is indicated by *tshin-fu*, kindred, neighbor, thus: *fú-tshin*, father; *pe-fú* (white man), uncle; with *khieú*, *tsé*, *'niù*: *mú-khieú*, mother-uncle; *tchi-tsé*, brother's son; *seng-'niù* (born-girl), sister's daughter, &c. *Tsé* is sometimes merely euphonic, as *ji-tsè* (sun-child), day; *meu-tsè*, eye's pupil; *Fu-tsé*, master, Confucius. With *theu* (head) for round bodies: *shi-theu*, stone-block; *ji-theu*, sun-disc, &c. Words like our ream, span, brace, stand, head, sail, score, &c., expressive of the quantity of paper, oxen, pistols, arms, cattle, &c., are very numerous, and are called numeral particles; thus, *inside* is added to the number of houses, rooms, &c., *empty* to that of slaughtered sheep, *root* to that of trees, ribbons, &c.; *jewel* numbers officers, *maxim* mysteries, *long branch* long things, &c. Collectives are made thus: *fú-mù* (father-mother), parents; *hiung-ti* (older-younger brother), brothers; *khin-shéu* (biped-quadruped), cattle, beasts, &c.; *khing-chúng* (light-heavy), weight; *yuán-kin* (far-near), distance, &c. The lists in lexicons contain many words expressive of opposites. *Eul* expresses diminution, or contempt, or is expletive, as *'niù-eul*, damsel. Many compounds are allegorical and poetical: *shan-kiun* (mount-prince), tiger; *thian-'niù* (heaven-daughter), swallow, princess; *fù-yúan* (city-garden), governor; *han-lin* (pencil-forest), imperial academy; *thian-tsé* (*cæli filius*), emperor, &c. To compounds belong foreign proper nouns: *Si-yung-kŭŏ* (ocean-kingdom), Portugal; *Ta Liu-sung* (great Luzon), Spain; *Thian-tchu kiao* (heavenly master's religion), or *Shi-tsé kiao* (10 or cross-sign religion), Christianity. Stanislas

Julien gives a synopsis of all
pounds in *Hoei-lan-ki* (*Histoir*
craie, Lond. 1832).—As for Ch
names, everybody's name is cha
stages of life, even after death. Th
clan name) precedes the others, and den
illustrious persons, with the suffix
family). The original *pĕ-kia-sing* (
names) have been increased to 468,
only 32 consist of two words (*fu-sin*
after birth the *jú-ming* (milk name)
by the father from among the *ki-tsian*
nomina), and serves instead of the
pronoun, as a more modest way
Then follows the *shu-ming* (book
student; later, the *kuan-ming* (
name). With the *kuan* (cap) of vir
ferred in the 20th year) you
girls at their betrothal, obtain
tsé (title) for the rest of life, to wh
norific epithet is often attached in
year. This title is used instead of
personal pronoun in addressing per
death a *hoéi* (honor-name) is giv
deceased, under which he is mentio
tory. Let us take Confucius as
tion. His sing was *Khung*; his jú-
hill (from a prominence on the
commemorative of the sacred
whereon his mother's prayers obt
grant of fertility); the use of the
forbidden as a profanation and
reading by *Hŭŏ*, "a certain one,"
phrase, "The name of the holy teac
be passed in silence." His tsé w
(middle-sacred, he being the sec
sons of his father); his hoéi *Ni-fu*
ter), which was exchanged for
prince), then for *Sian-shing* (ancient
for *Wen-siuan-wang* (prophet-king),
Tchi-sian-shing (most ancient saint).
fu-tsé, or *Khung-tsé*, was altered into
fucius. The original family name of
which is called to rule over *Thian-hi*
below, or China) by *thian-ming* (*cæli*
Dei gratia) is often retained, but
ly replaced by pompous epith
glory; *Ming*, splendor; *Tsh*
China is now called *Thai-tshing-k*
rorum imperium), while the old
nation *Tchina* (*China* of the Por
taken from the family name of th
nasty, especially from the emperor *Shi*
the builder of the great wall, 246 to
During his reign, the emperor is n
designated either as *Hoang-ti* (
Augustus), or *Thian-tsé* (heaven's
sháng-hoang-ti (now-up majesty),
dressed by various titles. Since that fir
ti, the emperors have monopolized the
of the first personal pronoun, as the
rulers and newspaper writers do "
2,000 years the emperors have c
accession a symbolic expression
instance, *Khang-hi* (deep peace),
(heavenly shield), &c. These may b

consequence of great events, and serve as *nien-haó* (annual titles) with the sexagenary cycle, for chronological data. After death the emperor receives the *shí* (title) expressive of his fortune or quality; thus, *Fei-tí* (dethroned emperor), *Shing-ti-shin-kung-wen-wù hoang-tí* (holy, virtuous, divine, deserving, learned, warlike emperor), *Khing-ming-kuàng-hiaó hoang-tí* (venerable, glorious, merciful emperor); the former abridged to *Wen-tí*, the latter to *Ming-tí*. They also receive *miaó-haó* (temple names), preserved in the hall of ancestors. Such are *Shi-tsù* (dynasty's forefather), *Tching-tsung* (perfecter of exaltation), &c., recurring in the dynasties; so that emperors of the same name are distinguished by prefixing the name of the dynasty. The milk names of emperors are held sacred; thus, for instance, the sinograms *hiuan-yĕ* (blue spark), forming the milk name of *Khang-hi* (1662–1722), were printed during his long reign in a mutilated form, and in his dictionary the classific *hiuan*, previously the 96th, was promoted to the 95th place.—Geographical names are mostly compounds of words denoting qualities or events. The characters of water (85th *pu*), mountain (46th), town (163d), &c., are often added, for the sake of avoiding ambiguity; *e. g.*: *Hoang-ho*, yellow river, *'U-ho*, black river; *Hieu-lung-ho*, 9 dragons' river; *Kin-shan*, gold mount; *San-tshian-shan*, 3 peaks mount; *Shun-thian fù* (inclined sky-circle), containing the north residence (Peking), and *Kiang-ning fù* (river's quiet circle), the south residence (Nan-king), &c. See Ed. Biot's *Dictionnaire des noms anciens et modernes des villes, &c., dans l'empire Chinois* (Paris, 1842).—The Chinese have been and still are known under many names taken from the imperial dynasties; as, *Han-jin* (Han-men, 163 B. C. to 496 A. D.), *Thang-jin* (A. D. 618–904), *Ming-jin* (1368–1647), and now *Tshing-jin*, from the ruling Mantchoo dynasty. Beside the above-mentioned names of China, we mention the following: Σιναι, in Ptolemy Θειναι; Arab. *Jin*; Sanscrit, *Maha-China*; Hindoo, *Ma-chin*; Russian, *Kitai*; Mantchoo, *Abkai Fejergi*; Chinese, *Thian-hia* (under-sky); Mongol, *Tägri ūn doriha*; Roman, *Serica* (silk country).—Grammatical gender is unknown, the sexês being designated by *fù*, father, *mù*, mother; *nan*, male, *'niù*, female: thus, *fù-jin*, man; *'niù-jin*, woman; *nan-tsé* (male child), son; *fu-fù*, man and wife. The males of animals are indicated by *meù*, male; *kung*, noble; *kù*, bull; females by *pin*, *mù* (even plants: *meu-tan*, our *pæonia moutan*); birds by *hiung*, male, *tsheu*, hen. The plural number is mostly recognized by the construction (as in fish in English), or noted by prefixing *tchung*, all, people; *tchu*, each, several; *shu*, multitude; *to*, much; or suffixing *kiai*, all, together; *kiu*, each; *hian*, full; *tu*, full (prefixed, *tu* means imperial court); or by repeating the noun; or by collective names, such as *tàng*, class, guild; *lui* or *péi*, a sort: *Hang-shang-tàng*, Hong merchants; *fei-lui*, robbers (*latronum genus*); *'i-péi*, foreigners (*exterorum genus*). Pronouns receive *men* as a mark of the plural. Some nouns are used with certain numerals: 4 seas or kingdoms, regions, limits; 5 grains; 9 provinces; 100 clans, magistrates, professions, &c.; 100 or 10,000 things, instead of all. Categories of cases are indicated by prepositions or postpositions; by the auxiliary verb *yeù*, to have, for to be; or by position. The nominative precedes, but a dependent noun follows; *e. g.*, *tí-taó min shú* (*terræ virtus procreat arbores*). The vocative is indicated by subjoining *tsai*, *'o*; the genitive, by being before the nominative, or by adding *tchi*, or in the *ku-wen*, *ti*; thus, *min-tchi li* (*popul-i vis*); *tá-hiŏ-tchi taó* (*magnæ scienti-æ via*); *tung-fang tsing-tí shé yé* (*orientalium regionum viridis imperatoris domus est*). A peculiar usage is exhibited in *'ĭ-pei tshieu* (*unius poculi vinum*, instead of *poculum vini*). The accusative follows the verb in a simple sentence: *Sháng haò shen* (*superior amat virtutem*); *Tsè jĭ tú-miaó* (*Confucius intravit magnum templum*). Some writers use *'iu*, *hu*, as marks of the accusative: *Se hu thian ti-tchi kian* (*replet* [τον] *cœli terr-æque intervallum*); or *ỳ* (derived from the verb to employ): *kiun-tsé* (*nobilis*) *ỳ-jin* (*humanitatem*) *tshun* (*servat*) *sin* (*in corde, animo*). Cases of direction, of place, of aim, &c., with the verbs *tsái* (*in-esse*), *tchù* (*hospitari aliquem*, stop with somebody), *fan* (*redire*), *lieu* (*fluere*), *thúi* (*redire ex*), *tchhŭ* (*exire*), *ji* (*ingredi*), *'iu* (*ire*), govern the prepositions *'iu*, *yú*, *hu*, *tchu*; for instance: *kiai* (*omnes*) *'iu* (*optant*) *li* (*stare*) *'iu wang-tchi* (*in reg-is*) *tchhao* (*aula*). Instead of the locative verb, to be in, the verb *yeù* (has, contains) is used: *phao yeù fei jŭ* (the kitchen contains fat meat); *kieu yeù fei mà* (the stable contains fat horses); *min yeù ki ssé* (the people have the color of hunger); *yé yeù ngó-phiaó* (*campi tenent fame necatos*). The dative and ablative are expressed by the preposition *'iù*, to, till, toward, from, with; by *tsé*, from; and by *tshung*, to follow, &c.; examples: *kai 'iù fú-tchi taó* (*aberrare a patr-is via*); *shu tsé sháng shu kiá yè* (*libri a supra scribuntur deorsum*). What might be called the instrumental case is expressed by *ŷ*, thus: *ŷ-min li wei* (*per populi vim facere*); *yé-ŷ ki ji* (*noctem per continuare diem*), &c. Adjectives precede the nouns: *pĕ má*, white horse and horses; *shing jin*, holy man and men; but follow when used as predicates: *jin ngŏ*, *li pŭ ngŏ*, man bad, law not bad (is). The suffixes *tchè*, *ti* make adjectives: *khiang-tchè*, endowed with force, strong. So *tchi*: *hian-shing-tchi khiun*, wise and holy princes; *yung-te-tchi hing*, constant exercise in virtue. Sometimes an interjection separates the adjective or concludes the phrase: *tà-tsai 'ian 'i*, great O word! *tà-tsai shin-jin-tchi tao*, great O holy man's virtue (way)! *yeu-yeu tá tsai*, to have, to have great O! meaning O greatness of abundance! (300 ceremonies and 3,000 usages). The comparative is expressed by position or by the particles *'iu*, *hu*, præ; *ju*, sicut, before *'ĭ*, magis, plus; thus: *Tshun hu jin-tche*, *mŭ liang 'iu meu-tsé* (of all which of man nothing more precious than eye's pupil); *jin mu tu 'ian wang-tshin* (man nothing worse can do than forget parents); *tchè-kó* (this) *pi* (compared with) *ná-kó* (that) *hoan kao* (still high). The superlative is formed by repetition, or results from the construction, or from particles (*tchi*, highly; *shin*, very; *tsúi*, much): *tchi pu jin*, highly not human (inhuman); *tshe-lì tsúi-haò*, this method much good (best); *yuan-yuan khi-yuan*, deep, deep its depth; *nan-'niù kiu shi jin-tchi tà-lun yé*, man-woman marriage men's greatest bond is; *jin wan 'ue-tchi ling* (man 100 things of reasonable—man is most reasonable of all things).—Seventeen cardinal numerals serve for all numeration. They are of 3 kinds as to their names (the common 1 and 2 for the sexagenary cycle), and of 5 kinds as to characters (*sú-mŭ-tsé*), viz.: 1, *'iuán pen-ti* (radicals) of the *ku-wen* and in common use; 2, *tà siò-ti* (great), composed of homophonous sinograms, employed to control the former; 3, *hoa mà-ti* (flowery ponderals), or *Su-tcheu mà* (Su-tcheu's weight), cursive, mercantile, compendious; 4 and 5, *hoa kia-tsé* [of the denary and duodenary cycle, by whose combination Nau devised the sexagenary cycle, 2637 B. C., used for counting, together with the *nien-hoá* (year-titles, see above), years, the week of 60 days, and the months of the quinquennial lunar cycle], consisting of the *shí-kan* (10 stems) or *thien-kan* (heaven-stems), and of the 12 *ti-chi* (terrestrial branches), for counting the 12 hours of the natural day and the signs of the zodiac. (See Ideler, *Ueber die Zeitrechnung der Chinesen*, Berlin, 1837.) The common numeral words are: *'i* (*yi*), 1; *eúl*, 2; *san*, 3; *seé*, 4; *'u* (*wu*), 5; *lŭ*, 6; *tshi*, 7; *pă*, 8; *kieù*, 9; *shĭ*, 10; *pĕ*, 100; *tshian*, 1,000; *wán*, 10,000; *ŷ*, 100,000; *tcháo*, 1,000,000; *king*, 10,000,000; *kai*, 100,000,000. Numbers are expressed by placing the multipliers, or 1, before 10, 100, 1,000, &c., and subjoining the additionals; thus, 1858 is *'i-tshian pă-pĕ 'u-shĭ pă* (1 thousand, 8 hundred, 5 ten, 8). In the *ku-wen* 10 is also expressed by *sún* (decade), and the single positions are joined by *ŷeú* (to have, here signifying also). The weight characters are written horizontally from left to right, by superscribing the coefficients, and expressing our intermediate zero by *ling*. In the *sú-piaó* (logarithm tables) made by the Jesuits at the order of Khang-hi, the sinograms are arranged in the European manner and with the zero. The *ku-wen* has no ordinals, which are made in the *kuan-hoá* by prefixing *ti* (order) to the cardinals, and *kŏ* (each) for distributives. The adverb "times" is expressed by suffixing *tsé* (in the *kuan-hoá*). Double, treble, &c., multiplicatives are represented by specific characters or by proper words. *Shing* (2 pairs) is used for 4 in speaking of carriages, arrows, birds. In enumerating things, the following method is used: from 1st to 2d, *sháng* (upper), *hiá* (lower); from 1st to 3d, *sháng*, *chung* (middle, 2d), and *hia*; from 1st to 4th, the 4 first characters of the *y-king* (see below): *'iuan*, 1; *heng*, 2; *'li*, 3; *ching*, 4; from 1 to 10 the characters of the denary cycle, from 1 to 12 those of the duodenary, and by

connecting both cycles, the ordinals up to
mostly in chronology; from 1 to 9: *sháng-sh*
1st; *chung-sháng*, 2d; *hiá-shang*, 3d; *sh*
chung, 4th; *chung-chung*, 5th; *hiá-chung*
sháng-hiá, 7th; *chung-hiá*, 8th; *hiá-hiá*,
Of personal pronouns there are for the
son 4 in the *ku-wen*, 5 in the *kuan-hoá* (
being common to both); for the 2d, 6
ters (only 3 words) in the *ku-wen*, 1 in t
hoá; for the 3d, 4 in the *ku-wen*, 1 in
hoá. *Tchin* (I, we) is used exc
emperor. The plural signs are
tèng, *péi*, *mèi*, *men*; thus, *ngò-tèng*, we
(*nous autres*). The genitive mark mak
sessives: *tsai thien ngò-teng fu-tche* (wh
heaven [in] our father). Etiquette of
bids the use of the personal pronouns;
sions of modesty, humility, veneration,
ed by the degree of honor due to the
being used in their stead. Thus *khieu*,
means "I Confucius," as explained above:
jin, little man, would be used by a pr
stead of the personal pronoun I. A va
prince would say *tchin*, subject, as equiv
"I, subject;" a pupil speaking to his
says, *tschie*, thief, instead of "I;"
mentator or one differing in opinion
"weak head." In speaking with kindred,
of the pronoun, one says *ngò-siaò-ti*, (I)
one;" *siaò-fù-jin*, (I) "the little mannikin
superiors, *tsui-jin*, (I) "sinful man." Old
vated persons denote themselves as *laò-*
"old gentleman;" savants, *hiŏ-seng*, (I) "t
born." Some dignitaries say *pèn-fù*, (I) "
tropolis;" *pèn-tcheu*, (I) "my imperial city
I, the governor). *Fu-tsé* or *tsé* (thou or y
"master." Speaking to the emperor,
foot-stool, or *tchhao-thing*, court-palace:
other persons, *hiung*, (you) older brot
nien-hiung, older in years; *laò kian*
wife friend; *laò-ye*, old father, docto
kiá, noble four-span, sir; *tà-laò-ye*, grea
father, monseigneur (Latin, *senior*; Span
Italian, *señor*, *signor*). Etiquette is
exacting in regard to possessives. T
family (instead of my, mine), *kia-fu*,
father (*paterfamilias*, my father); to
or inferiors, *she-ti*, house-younger-brot
brother); *siaò-'niù*, little girl (my da
siaò-tshi, little woman (my wife);
little (my) servant; *pi-yeú*, humble (my)
pi-kúo, little (my) fatherland; *tsian-sheu*
(my) hand; *han-she*, cold (my) house; *ling-*
noble (thy, your) older brother; *ling-ts*
noble venerable (thy father); *ling-than*
noble court (thy mother); *ling-'ai*, the
love (thy marriageable daughter); *ling-*
kin, noble 1,000 gold pieces (thy
while a child); *kuei-thung-mien*, costly
ŷear (thy equal in age); *kuei-ŷang*, costly
ness (thy); *tsun-pi*, honored (thy) pencil;
kiá, honored carriage (your lordship); *kao*
sublime hand (thy or your skill, talent);
ming-'ú, sublime bright spirit (thy geni
Demonstratives: *shi*, the; *tshè*, *tse*, *see*, *fu*,
these; *pi*, that, those; in the *kuan-hoá*:

this, those; *ná*, that, those; *e. g.*: *Shi 'iu-sò 'iu-tchi*, That I what wished is (that is what I wished). The characters often vary. Relatives of persons are *tchè*, *tchi*; of persons and things, *yeu*, *sò*. *'Ai* (or *gai*) *jin tchè*, *jin heng 'ai tchi*, Loves men who, men always love him. *Jin-tchi wei taó*, Men which make way (the rule men make). *Ki-sò pŭ 'iu* (or *yiu*) *wo-shi 'iu-jin*, Self what not wishest, do not to men. Interrogation: *Sò-pao wei-hian?* What worthier than (a) wise (man)? Examples of reciprocal, interrogative, and indefinite pronouns are: *Fu-jin pĭ-tsé-'ù*, *'ian héu jin 'ù tchi*; *kia pĭ-tsé-hoeì*, *eul héu jin hoei-tchi*, Male-men (mankind) first themselves disrespect, and then men disrespect them; families (dynasties) first themselves ruin, and then men ruin them. *Shŭ wei tà?* What does (is) great? *'U-pŭ tchi shuî-tsè*, I not know whose son. *Hŭŏ wéi Khung-tsè yŭe*, Somebody addressed Confucins (and) spake. *Húŏ yuàn*, *húŏ kin*, *húŏ khiù*, *húŏ pŭ khiù* (*Aliqui abscesserunt*, *alii approximaverunt*, *alii abiverunt*, *alii non abiverunt*). *Mei jin*, every man; *fan*, whoever, whatever, every: *Fan-ssé mĕ*, *tsĕ-lĭ*, Every business, (if it be) premeditated, then succeeds.—The *sing-tsé* (living words) or *hŏ-tsé* (moved words), verbs, are such by their position, and are either simple or compound; as *tshiang-tse*, wound-hurt, to injure; *wàng-ji*, pass-return, to enter; *fán-lán*, flood-overflow, to inundate, &c.; or collective: *sing-hŏ*, be born, flow, meaning to live; or allegorical: *tshu-lŏ*, to mount-alight, meaning to die. The verb substantive is omitted wherever the sense is plain without it, or it is indicated by the expletives *ye*, *tchi*, or expressed by the demonstrative *shĭ*; thus: *Kiun-tsè-tchi te-fung* (*princip-um virtus ventus*); *kù-tchi 'iu yè*: *tchi*; *kin-tchi 'iu yè*: *tchhé* (*vetustatis inculti*, *sinceri*; *præsentis temporis inculti*, *astuti*); *jin-tchi-shĭ*, *sse-tshin-shi yè* (*pietatis fructus servire parentibus*). Active being is expressed by *wei* (*facere*); the French *y avoir*, by *yeù*; being in a place, by *tsai*; as, *li-jin wei mei* (*rustica virtus est amabilis*); *yeù fou-hiŏ* (*sunt non student*—there are men who study not); *tsái hiá-'uei* (*esse humili gradu*). Many actions are denoted by the general verbs *wei* and *yeú*; thus, *wei tu* (to do towns), to administer. In conversation, *tà* (to strike) forms many idiotisms: *tà-lûi* (strike-thunder), to thunder; *tà-tì* (strike-sneeze), to sneeze; *tà-lú*—*battre le chemin*; *tà-hoa* (strike-flowers), to tell a lie; *tà sse wei* (strike lion's tale), to preach. A periphrastic passive is formed with *kian* (*videre*), and in the *kuan-hoá* also with other verbs: *kian-paò* (*videre-tueri*), to be defended. Causatives are made by auxiliaries meaning to do, to command (*faire faire*), to send; reflectives (*semet*) by *tsé* (self), reciprocally by *siang* (each other). Frequent auxiliaries are *kàn* (*audere*), *neng* and *khò* (to be able), *ssé* (to command), *haó* (to be diligent), *'sü* and *yuán* (to choose), *yaó* and *tsiang* (to be willing), and others in the *kuan-hoá* which mark the mood and tense, or give a specific sense to other verbs. The indicative is plain. The imperative is understood from the construction, but is expressed in the *kuan-hoá*; thus, *nì-shuĕ*, thou speak. Prohibition is denoted by *pŭ*, *wĕ*, *wu* (all meaning no, not), or joined to the verb *tshing* (*noli*, *nolito*); thus: *Wang! tshing-wu haó siaó-yung* (King, do not love small power). Conditionality results from the construction, or is pointed out by *sûi* (*quamvis*), *keu*, *fu*, *ju*, *thàng* (if), the condition preceding, and sometimes followed by *tse* (then), *pĭ* (nevertheless, indeed), &c. *Wang yuĕ*: *Ho ŷ-li 'u-kûŏ*; *tà-fu yuĕ*: *Ho ŷ-li 'u-kia* (*Rex dixit*: *Quomodo lucror ex regno*; *magni viri dicunt*: *Quomodo lucramur pro familia*). The Latin *utinam* is characteristically expressed in the *kuan-hoá* by *hen-pŭ-tĕ* (*oderim non assequi*). All verbs become nouns, as subjects; and with the preposition *ŷ*, gerundials; thus: *Tchung-jĭ pŭ-shĭ*, *tchung-yé pŭ-tshin*, *ŷ sse* (All day not eat, all night not sleep, meditating). Participles are made by suffixing *tchè* (*qui*), and by the auxiliary verb *khó* (can). The tenses are evident from the construction, or are marked by adverbs or other verbs (in the *kuan-hoá* the past tense by obscured verbs); the past by prefixing *tchhang* (to experience), *yeù* (to have), *ki*, *'ì*, *tsheng* (now, formerly); the future by the preposition *tsiang*, or verb *khèng* (to be willing); thus: *Jin tsiang-siang-shi* (Men will each other eat). The immediate future is denoted by *tsieù*, *ye* (immediately), and in the *kuan-hoá* sometimes by the past with the suffix *liaò*. Personal pronouns, or appellatives, when subjects, are usually expressed in the *kuan-hoá*, but not in the *ku-wen*. Adverbs (and nouns may be used as such) are often separated from the words they qualify. Verbs qualifying other verbs always precede them. The repetition of a word shows continuity, or energy, or plurality, but sometimes alters the meaning. Two negations affirm. Words of relation are either prepositions or postpositions. *Ku-wen* prepositions are: *'iu*, in, ad, versus; *ýu*, the same, and pro; *hu*, almost the same, and usque; *tchu*, ab, post, cum, &c.; *'iù*, versus, cum; *tse*, ex, de; *tshung*, a, de, &c. Postpositive nouns governing the genitive: *chung*, middle; *nei*, inward; *'uei*, outward; *shang*, *hia*, &c., the genitive mark *tchi*, the instrumental *ŷ*. Example: *Lin-tchung pŭ-mai sin* (*Sylvæ in-medio non venditur lignum*). There are few conjunctions. There are many interrogative interjections. Ejaculations of allurement or repulsion are often graphic. Onomatopoetic sounds, however, have sinograms even in the classic books; thus, alluring birds, *ing-ing*, *kiai-kiai*, *po-po*, &c. The final particles are more frequent than in other languages, and although they do not affect the sense of the phrases, they keep them asunder, articulate the parts of periods, or, at least, round them.—The CHINESE LITERATURE is the most ancient, most characteristic, most consistent, least interrupted, most varied, and most voluminous of all. The government encourages it by defraying the expenses of publication of great works, especially on history, philology, arts, and sciences; and by giving them to libraries, high functionaries, and institutions of learning. The only means of acquiring office, honors, and emoluments, is by proficiency in letters. Schools abound through the empire, affording cheaply the best instruction. The press is free, being only restricted from publishing licentious and revolutionary books, the authors and promulgators of which are subject to the severest punishment, even to death. Khian-lung, a great Mæcenas, sentenced several writers to death, and their families to banishment. Thousands of small volumes circulate in all the towns. Every distinguished man has a library. The expense of printing is often defrayed by subscription. Su-chu-fu is prominent among the cities as a book emporium. Works on history, geography, ethics, government, laws, and the language, abound more than those on other subjects; the speculative sciences, on the contrary, are neglected. The most illustrious patrons of learning were the emperors Wen-ti (180 –157 B.C.), during whose reign paper, ink, and pencil were invented and the *nien-hao* introduced (see above); Wu-ti (141–86), founder of the first library; Siuen-ti, fosterer of the canonical books, and Yuen-ti (died 32 B.C.), all of the Han; Ming-ti (A. D. 58–76), who introduced Buddhism; Wen-ti, a Sung; Wu-ti, a Liang; Wen-ti, a Sui; Tai-tsung, a Thang (626), reviser of the laws; Sui-tsu (Kublai, founder of the Mongol dynasty Yuen, 1279), a friend of astronomy, burner of the books of the Tao-sse; Shi-tsung (1311), who ordered the translation of Confucius into Mongolian; Shun-shi, the 1st Mantchoo (1644), instructed by the Jesuit Adam Schall, president of the mathematical tribunal; his son Khan-hi (Shi-tsu, 1661–1722) ordered a survey of his empire by the Jesuits, wrote on geometry in Mantchoo, endeavored to arouse the Chinese to progress, fostered education, ordered the best Chinese and Mantchoo dictionaries to be printed, as well as works on the exact sciences by the Jesuits, founded a chemical laboratory, improved the astronomical observatory, was especially familiar with Gerbillon and Bouvet, and wrote many poems; Khian-lung (1736–'99), grandson of the preceding, an author, founded 4 libraries, and republished many good works. Xylography and typography date from A.D. 950. No history of Chinese literature has yet been written; notices, however, may be found in the writings of sinologues, especially in De Guignes' *Revue de la littérature Chinoise*, in the *Mémoires de l'académie des inscriptions*, in Bridgman's "Chrestomathy," and in various periodicals. The want of space forces us to be very concise, to depart sometimes from strict adherence to the catalogue of the 4 libraries, to chronology, and to rigorous classification.—The *Yang-ting sse-fú tsiuan-shu tsung-mu* (*Catalogus 4 bibliothecarum*), giving a synopsis of 78,627 volumes (in 1818), to be extended to 160,000, a library in itself, divides all works into 4 classes: canonical, historical, pedagogical, and æsthetic. I. Classics (so-called) in 10 sections.

The '*U-king* (5 Canons, or fund
able, and sublime Doctrines)
(Transformations), the oldest of all
attributed to Fu-hi (about 2800 B.
what later), commented on by Wen-
er of the Tcheu (1130), and by his
wang, arranged by Confucius (bo
C.); it consists of combinations
(both principles: one symbolized by
tal line, for activity; the other by
rupted parallel, for passivity) in
figures); thirdly, in *pa-kua* (8
blematic of the following cat
generation, ether, north-west;
west; fire, heat, south; lightni
sound and heat, rigidity, east; wi
south-east; water, cold, north;
lidity, weight, north-east; earth,
dryness, south-west); fourthly, the
bined in 64 emblems, in as many c
ringing the changes on these they
as ethical and political keys to e
gony from *yin* and *yang* (the
principles), by logomancy, div
(magic lines, 89th classific), b
There are about 1,450 treatises on
by P. Regis; German by Mo
extracts by Gaubil.) 2. *Shu-king* (
cording the maxims, decrees, and
tions of the emperors Yao (2357
Humane, Shun the Charitable, Yu
founder of the Hia (2207); of this
well as of that of the Shang (1766)
(1122) until Ping-wang (770). Its
were collected by Confucius; it de
empire (*Yu-kung* chapter) and s
ernment; contains vows to Shang-
God) before battle; admonishes
manity, by examples. (French
1770, 4to.) 3. *Shi-king* (Chants)
profound on moral sentiments,
private acts (such as harvesting,
in 4 chapters (*Kuo-fang*, nation
ya, minor eulogies; *Ta-ya*, great eul
imperial sacrifices), subdivided in
rhyme; praising the good, censur
Some are fantastic, probably inte
lected by Confucius. (Latin by De
German by Mohl, French by Julien
Essai, 1828.) 4. *Li-ki* (Ritual, Mir
ity), attributed in part to Chau-
commentary by 2 brothers Tai; it c
teachings of Confucius on every actio
age; admonitory to patience, &c. T
terpolated and not entirely o
the norm of the Pe-king board
the 6 boards of governmental de
the basis of the religion of the
preaches reverence to parents, hon
tors by good actions, also the correc
rents by the sons. 5. *Chun-tsieu* (
tumn), enlivening and reproving like
sons respectively; recording events
wang down to 560, drawn by Con
morials of his native region
tung), comparing the bad with p

rulers. With the *Shu-king* it constitutes ancient history, to which little has since been added from monuments. (Extracts in *Comment. Adamemiæ Petropolit.*, vol. vii., 1790.) The 6th section of this class in the catalogue contains the *'U-king ku-kiai* (Commentaries on the 5 *King*), that by Chu-hi (1162–1190), under the Sung, being the most illustrious. He wrote also the *Siao-hio* (Little Instruction, viz., for the young). (Latin by Noel, French by Cibot, in *Mémoir. concern. la Chine.*) Section 7, *Hiao-king* (Filial Piety), by an anonymous writer, contains the apophthegms of Confucius in 18 chapters, and conversations with his disciple Tang-tsan; it is much commented on, even by an emperor of the Thang (8th cent. A. D.). Obedience is the root of good morals; the body is to be preserved in honor of parents; thereon depends obedience to the sovereign. Disobedience is the greatest of the 3,000 crimes. The ruling of ministers over the king, disrespect to the wise, and disobedience to parents, are the sources of general rebellion. The 8th section contains the *Ssé-shu* (4 books), with the commentaries. These *Shu* are: 1. *Tá-hio* (Great Doctrine, viz., for adults), on good government by means of self-conquest. Written from the oral instructions of Confucius, by Tsang-tse (the Chinese Xenophon). The first of the 11 sections is alone supposed to be original. The ancients, when about to restore reason in the empire, first put the province into order, previously regulating their houses after having improved themselves by governing their passions from right notions, and by regulating their wishes by the nature of things. "When the mind is clear by examining things, vices stink, and virtues gladden us even as the colors of beauty." (Chinese and English by Marshman, 1814; Chinese, Latin, and French, by Pauthier, 1837.) 2. *Chung-yung* (Right Medium), the most elaborate of the *Ssé-shu*, compiled by Tse-ssé, grandson of Confucius, with most minute comments by others; recommending virtue by holding up the deeds of a fictitions *kiun-tse* (princely man). "Avoid extremes in every thing except in *ching* and *ho* (probity and cosmical harmony), and heaven and earth will accord; all will go on naturally. A *shing* (wise, humane hero, good by himself) is preëminent; a *hian* (honorable, farmer, physician, &c., good by education) is middling; a *yu* (wicked, slave, actor, cheat, &c., bad in spite of instruction) is good for naught. Sincerity crowns all virtues; benevolence perfects man who perfects others by knowledge." (Marshman's "Works of Confucius," 1809; Chin., Lat., and French, by A. Rémusat, in *Notices et extraits*, vol. x., 1817.) 3. *Lun-yu* or *gni* (Speeches-replies), conversations of Confucius, written by 2 pupils after his death, without chronological order; often obscure from brevity; precepts of the ancients are intermixed with those of the sage; 2 vols., 10 chapters; on filial piety and paternal affection, as the roots of virtue; extolling some of the Tcheu dynasty, his pupil Hui, and other *Shing*: lamenting the state of the country; on pure religious worship; praising the ancient customs, gentleness, urbanity, humility, diligence, sympathy with the sorrows of others, kindness to animals, music, &c.; relating Kung-fu-tsé's private and public conduct, his mode of teaching, his veneration of ancestors, caution in medicine, &c. An inquiry about a word expressive of the conduct becoming the whole of life, is thus answered by the *Shu*: "Do not to others what you do not wish to be done to yourself." (Chin. and Eng., Marshman; German by W. Schott, Halle, 1826.) 4. The work of Meng-tsé (eminent and venerable teacher, commonly called Mencius, born in Shan-tung, about 370, a disciple of Tse-ssé), containing conversations with petty sovereigns, full of irony on their vices; putting the will of the people above theirs; advising the dethronement of bad rulers; affirming that all men are born good, that virtue is tried in adversity, that a high social position does not enhance, or a low one degrade the man. It is equally esteemed with the above-named 3 books, which all serve as class-books in schools. Meng-tsé was most carefully educated by an exemplary mother, was more energetic than any other Chinaman, even bolder and more eloquent than Confucius. One of his posthumous titles is "The second Saint." (Chin. and Lat. by S. Julien, 3 vols., 1824–'9.) Before Confucius (about 600) Lao-tsé (old teacher), an ascetic sage, wrote the *Tao-te-king* (*Le livre révéré de la raison suprême*, par G. Pauthier, 1838, sharply criticized by Klaproth). This writer heads a series of 10 philosophers whose collected works fill 34 folio volumes. One of them, Sun-tsé, wrote on politics and morals; another, Kuan-tsé, on political economy, legislation, and war; a third, Hoei-nan-tsé, grandson of the 1st Han, is the oldest author in the literature, who wrote on a great variety of subjects. Among the commentators on the *King*, the most memorable are Siun-tsé (3d cent. B. C.); Hoang-tung-fa (10th cent. A. D.), who wrote a daily exposition of the *Hoang-shi*, which was printed in 1337; and Chu-hi, mentioned above. In the beginning of the 18th century, the *Han-lin* (pencil forest) of Pe-king paraphrased the 4 books for the young emperor Shing-tsu, and their paraphrase was reprinted in 1821 under the title of *Yi-kiang* (Daily Reading). A 6th *King* on *Yo* (music) has been lost. The letters of Lo-khieu-yuan, a contemporary of Chu-hi, and the prose and poetry of Liu-tung-pin (9th cent. A. D.), are also to be mentioned among works on morals and philosophy. Christianity, propagated by the Minorite Montecorino in 1294, became a subject of attack in the latter part of the 17th century; of works of this kind we will mention the *Sing-li-tchin-tsiuan* (Sacred Elucidation of Nature's Laws), by Sun-te-chao, 1753; and the *Shing-yu kuang-hiuan* (Sacred Doctrine, Indication of), by the emperor Yung-ching. (Russian by Leontiev, St. Petersb. 1778, and English by Milne, Lond. 1817.) There are also moral tales and aphorisms, mostly by the

Tao-sse, a sect of alchemists and sorcerers, founded by the above-named Lao-tsé, or Lao-kiun, a sort of epicurean, who held a peculiar theory of the Trinity; his mother is said to have gone pregnant with him for 80 years. Among these productions we cite the *King-sin-lo* (Canon of Venerable Faith), collected probably by Tcheu-ting-tshin, printed in 1749. Section 9, of works on music and chorography, of which Father Amiot gives unsatisfactory specimens, is also rich. Section 10 treats of paleography, writing, and lexicons, including those in the Mantchoo. The *Pei-wen-yu-fu* (Phraseology) contains 186 volumes; the *Ping-sse-liu-pian* (Phraseologies on the *King*, &c.), 220 volumes.—Ching-wang, a Tsin, the founder of the Heu-tsin (after Tsin) dynasty, who called himself the first *Hoang-ti* (Augustus) and *Shi* (beginner), and from whom China was named, also the builder of the wall, wishing to restore the ancient order of things, ordered, on the advice of Li-sse (215 B. C.), the burning of all books. Remonstrances were offered against this measure, and 460 recalcitrants were buried alive. From the works that escaped, and from memory, many books were re-written under the Han. II. History, biography, and geography, especially the topographical part of the science, are classed in 15 sections. Since the great historians, named below, the history of each dynasty has been written under the next dynasty, for the sake of impartiality, by the members of the interior college; though private authors have been allowed to write during the existence of the dynasty. Sse-ma-than, called the great prince of history, collected and arranged the earlier documents which had been saved. His son, Sse-ma-thian (141 B. C.), surnamed Herodotus by the Jesuits, visited all the provinces to collect traditions, examined the records of ancestral halls, the secret memoirs of the stone house and of the golden box, the registers *Ju-pan* (jasper-board), the *Liu-ling* for laws, the tactics of Han-sin, the *Chang-ching* for literature, the *Li-y* for usages, ceremonials, &c., and recorded the results in his great work *Sse-ki* (Historic Memoirs, 104 B. C.), in 130 chapters, reciting events chronologically from 2637 to 122 B. C.; with details on worship, astronomy, geography, music, weights and measures, the history of the great *kia* (families), biographies of statesmen, savants, &c. His style is lively and eloquent, his statements precise, his method a prototype for the continuators of the great annals. There are interruptions in his account up to the 9th century B. C., but from that period he is more connected. The collection *Nian-eul-sse* (22 Histories) comprehends the history of China from the end of the *Sse-ki* down to the end of the Ming (A. D. 1645), repeating also the events in that work; it is in 416 volumes, and a copy may be found in the royal library at Munich. Pan-hoei-pan, sister to the historian Pan-ku, wrote with him the history of the Han (266 B. C. to A. D. 24). Sse-ma-tching, the Suetonius of the Jesuits, w
the beginning of the 7th century A. D.
San-hoang-pen-ki (Three Sov
a semi-fabulous and lewd work.
(11th century A. D.), a s u, wi
San-chi thung-kian (Univer rror
ernment) in 294 chapters, r tu
ry of 1362 years, from the
B. C.; a work of details, in m li
summed up by the above-n
his *Kang-mu* (Net). The 2 d w
called *Thung-kian-kang* : they l
often commented u
were continued by
(French by De Mailla, *Histoire generale*
Chine, 12 vols., 1777, edited by the
Grosier.) Foreign nations are also n
this work. Yuen-ki-chung, a con
Chu-hi, wrote a history arranged accor
subjects, a method adopted also in K-
thai's *Ming-chao-ki-sse* (History of the
published in 1658. Of special histo
most important are Lo-heu's h
southern Thang (11th century);
sieu's *'U-tai-sse* (History of the 5 Dy
and Tso-thieu-ming's history of the v
doms. Among histories of other nations
yan-ping's *Su-hung-kian-lu* (History of the
gols). The *Wan-sing-thung-pu* and
thung treat of individual emperors
men. There are 17 great historical wo
volumes, with still more ample c
Khang-kien 'i chi (History Facilitat
tome of the above-named "Uni
and "Net." Chronological tables are
the *Wan-nian-shu* (10,000 Years' Book),
Li-tai-ti wang-nian-piao (Powerful Pr
nals); numismatic tables in t
sin pian (1,000 Coins). There
biographies, especially of celebrated
and many biographical lexicons,
niú chuen (Memoirs of Celebrated
Liu-piang (125 B. C.). The oldest work
mography is the *Shan-hai-king* (Moun
Sea Canon), in 18 books, for the most
sisting of fables.—No nation can com
the Chinese in the knowledge of its ov
try. Although they rarely travel bey
Indian archipelago, Siam, Burmah, Thib
Corea, there is no lack of geographical
even concerning neighboring countri
old anonymous works are the *Si-yu*
(Western Memoirs) and the *Si-tsang-*
Thibet). The *Sseu-khu-tshiuan-shu* (see
ot's *Mémoires concernant la Chine*) tr
of western countries. Other works
Tai-tshing-hoei-tiang (Great Tshing I
an imperial geography, written und
lung, in 116 books; *Hoang-yun-ki* (Desc
of the Earth), by Lo-sse-teng, published
D. 976–'84, republished in 1786–'96,
1803, without alterations, containing 172
on China, and 18 on foreign countries;
tsang-thu-shi (Description of Oui and T
Ma-chao-yun, Ching-mei-khi, and Lu-hu
furnished with charts and tables, publishe

king in 1792, translated into Russian by Bithurin, and into French by Klaproth. One of the most important of the many descriptions of China is *Kuang-yu-thu-ki*, by Lu-'ing-yang, consisting of 22 books with charts, and giving the topography of 15 provinces, the northern boundary, and Corea. A Chinese-Japanese map of Central Asia, made in the 7th century by Buddhist pilgrims, and the Chinese Jesuitic surveys (by Fathers Regis, Jertoux, and Friedel) of Mantchooria (1709), the Pe-che-li, &c., to the Russian frontier, and later (1718) of the whole empire, of Bootan, &c., copied by D'Anville in 1733, bear witness to the liberality of the Chinese government. (See Ritter's *Erdkunde*, 3d part.) Ma-tuan-lin (who died in 1322), the Chinese Strabo, wrote the *Wen-hien-thung-khao* (Exact Examination of Documents), a historical, statistical, geographical library, in 348 books, with great candor and sound criticism, discussing the divisions and products of China under the several dynasties or administrations, with minute information concerning the taxes, monopolies, trades, finances, schools, courts, music, war, laws, emperors, tributary provinces, foreign countries, astronomy—in short, concerning every thing deemed worthy of notice—covering a period of nearly 40 centuries. The perusal of this work alone, says Rémusat, would repay the labor of learning the Chinese language. Visdelou, De Guignes (*Histoire des Huns*), Ping-sse (on comets and meteors), and other Europeans and Chinamen, have derived materials from it for their works. Of topographies the Chinese have a wonderful profusion, generally dry in their descriptions, but more interesting than similar European books, being more diversified by chronological and other details.—Ming-ti, a Han, sent high officers to India to study Buddhism, who translated some important works from the Sanscrit into Chinese; among others, A. D. 76, the *Lalita vistara* (Life of Buddha). Many Chinese Buddhists visited India, especially Fa-hian (4th century A. D.), whose story of his pilgrimage, entitled *Foe-koue-ki*, has been translated into French by A. Rémusat. Hoei-seng and Sung-yun were sent thither by an empress in 518; Hiuan and Shang published an account of their Indian travels in 629-'45 (Fr. by Julien, 1853-'57); the itineraries of 56 bonzes appeared in 730; and those of Khi-nie, with 300 pilgrims, in 964. Many works, lost or destroyed by the Brahmins and Mohammedans of India, were saved by being translated into Chinese. The bonzes had 54,000 volumes on the religions of India. *Kin-kuan king* (Gold-shine Canon), attributed to Buddha, is one of these celebrated books. III. Works on education and the professions are classified in 14 sections. *'Iu-kia-lui* (Family Books) is a fundamental and general treatise, containing Chu-hi's doctrines on the primary matter of the universe, the *tau* (word), or principle of nature; on the development of matter (the 4 elements, metal, wood, water, and fire); and on immateriality (*i. e.*, the 4 cardinal virtues, benevolence, justice, decency, and wisdom, analogous to the *Sankhya* of the Brahmins, but verging on the Buddhistic philosophy). The 1st section comprises works on primary education, and on the education of females. The daughters of learned men are instructed in music, poetry, elocution, &c. Most books of primary instruction are in rhyme. The 1st school-book is the *San-tse-king* (3-Word Book), consisting of moral apophthegms, written under the Sung, translated into Russian by I. Bithurin (1829), and into German by Neumann (1836). The 2d is the *Pe-kia-sing* (100 Family Names). The 3d is the *Tshian-tsé-wen* (1,000 Letters), by Chao-king-tsé (A. D. 550), who is said to have composed from them an ode of 250 lines on nature, the duties of man, illustrious men, economy, &c., which has been translated into English by Bridgman. The 4th book for youth is that of odes, treating of the 3 powers (heaven, earth, and man), 4 seasons and cardinal points, 5 elements and cardinal virtues, 6 kinds of vegetables and 6 domestic animals, 7 passions, 8 musical tones, 9 degrees of kindred, and 10 moral duties. There are many reading books for the youth of both sexes. The 2d section consists of works on war, in which the Chinese are behind most nations. The *Hu-kiang-king* and *Wu-king* are prominent among their many military treatises. The 3d section is the department of jurisprudence. The most prominent work is the *Ta-tshing-hoei-tian*, with details on the condition of the empire, the organism of the administration, and the system of finances. (See Cibot, in the *Mémoires sur les Chinois*.) The *Ta-tshing-liu-li* is a collection of fundamental laws and penal statutes, revised and enlarged several times since 1646, and translated into English by G. Staunton, London, 1810, who also translated the journal of a Chinese officer among the Kirgheez, near the Caspian sea. The *Ki-tiao-li* (Decrees of the Season) is a chronological collection of the laws of the Mantchoo dynasty. The *Ko-chung-tiao-li* are ordinances on state prisons, revised every 10th year. The 4th section treats of agriculture, economy, the mechanic arts and trades, the culture of rice, tea, &c. Some of the books are in odes, or tables, furnished with drawings, &c. The *Kia-pao-tsiuen-tsi* is a family treasury of economy. A general view may be obtained from S. Julien's *Résumé des principaux traités Chinois sur l'éducation des vers-à-soie, culture des mûriers*, &c., Paris, 1836; also from his extracts from a chemico-industrial work by Song-ing-sing (1637), mentioned below, and his *Histoire et fabrication de la porcelaine Chinoise*, Paris, 1856, from the Chinese of Wang, Lang-pin-nan, &c. Of books inculcating political together with economical morality, there are the *Shing-yu* (Holy Commands), translated into English by Milne; Khian-lung's didactic ode, and the 16 apophthegms of Khang-hi, proclaimed on the 1st and 15th of every month, on filial and fraternal piety, concord, the culture of the mulberry and other plants, saving of property, education, contempt of foreign creeds, and performance of public duties. The emperor Yung-ching (1722–'85) and his son, the father of Khian-lung, enlarged these commands, and Wang-yu-pi dialogued them, adding a diatribe against Buddhism. The 5th section is of works on the veterinary art, with anatomical and acological tables. The 6th section consists of medical works. Medicine does not form a department or faculty in public schools, but is a free and often hereditary occupation. Most family physicians are eunuchs, each mandarin having one. Anatomy is neglected; the pathology is humoristic; physical elements govern certain parts and organs of the body; hygiene and diet are preferred to therapy and the use of drugs. The pulse, however, is diligently attended to, and the Chinese Hippocrates, Wang-shu-sho (4th century), wrote the *Me-kiue*, on the pulse (extracted from in Cleyeri's *Specimen Medicinæ Sinicæ*, Frankfort-on-the-Main, 1682). Other great medical works are *Chan-shi yi-thung* (Chan-shi's Universal Medicine), edited by his son in 1705; *Chi-shi-hiu-kiuan-chu* (Red-water Blue-pearl), by a Tao; *Kin-nang pi-lo-tsa-ching* (Motley Silk Bag of Deep Learning on Diseases), by Fung-tse-tchan (a cyclopædia of medicine), published in 1694; *Ting-pa-ku-kin i-kian* (Amended Mirror of Ancient and Modern Medicine), by King-sin, edited by his son (1589); and *Fung-yi pao-kian* (Precious Mirror of Oriental Medicine, *i. e.*, Japanese), by the Corean Hiu-sun. The emperor Hoang-ti wrote the *Niu-king*, on the application of philosophy to medicine, and the *Ling-tchu* (Temple of Reason), on medicine and surgery. Most of the ancient medical works are contained in Wang-keng-theng's *Y-thung ching-me* (Principal Veins of the Empire of Medicine), published in 1601. There is a work by Fung-chu-tchuan on the small pox. Inoculation has been known in China for 8 centuries, but vaccination was introduced in the present century. (See Staunton's "Treatise.") Wan-ngan wrote a medical poem, *Than-theu-ko*, in 1691. The 7th section contains many works on magic and kindred subjects. Liu-tsung-pin (9th century) wrote on mythology in prose and verse. The 8th section is on liberal arts. The most important books are *Hoa-tchuan* (School of Painters), and *Pi-tchin-thu* (Instruction for Wielding the Painting Brush). The 9th section contains works on natural history in profusion. The *Ta-kuon pen-tshao*, by the emperor Shin-nung (1107–1110), treats of stones, plants, trees, man, quadrupeds, birds, insects, fishes, amphibia, shells, fruits, cereals, and legumina. Other works are the *Pen-tshao king-mu* (Natural History of Necessaries), by a physician; the *Liu-kung-yo sing-piao-tchi* (Nature and Preparation of Medicines), by Liu-hiao (5th century); and the *Peu-tshao-kang-mu* of Li-shi-tchin (1596), continued by his son Li-khian-yun, with drawings by Li-khian-tchung, in 40 volumes, a sort of botany and materia medica, a methodical and ingenious compilation of every thing then known, edited several times at the imperial expense. It contains many pr a theory of anatomy, many maceutic prescriptions, and logy and natural philosophy. It is arra analogies with the *pu-sheu* (classifics), 86th, fire, 85th, water, 32d, earth, 16 96th, gems, 112th, stones, 198th, salt herbs, 75th, trees, 115th, cereals, 1 151st, the bean, &c.; it is superior to corresponding European productions cient and mediæval times, being more original and practical. The *Khie pen-tshu* (Botany of Hunger) treats of plant can be eaten during famine. The 10th comprises miscellaneous books in al The 11th section has cyclopædias, the compendia in wonderful profusion. *kin sse-wen lui-tsiu* (Ancient-modern 4 (tions), by Chu-ho-fu (1246), contains th temporary Chinese learning on hea teors, seasons, earth, sea, emperors, commerce, laws, hermits, Tao-sse, Bu artisans, spirits—in short, all sorts of first defining the word, then giving its nymes, then describing, showing its and quoting authorities. Shorter but was the *See-lui-fu* (Four Collections). by (992). Similar works are the *Kuang* by the brothers Hoa-li-hung and h (1639), since then much enlarged; the (Great Classic) of the emperor Yung-lo in 22,877 chapters; the *San-tsai-tu* (Ta the 3 Powers), on heaven, earth, and 130 volumes, with many illustrations; hi's *Ku-kin-chu-fu*, in 32 divisions, chapters, and 6,109 volumes. Memora also *Ye-hoe-pian* (1606), designed to co things worthy of knowledge; *Han-wei-* a collection of ancient works in 60 *Tai-tsing-yo-tung-tse*, a great cyclopædia arts and sciences in 200 volumes. Of pædias for the young, there are *Yeu-hio kiung-lin* (Ruby Forest for Antiquity- Youth); *Tse-fu-yuan-kuei*, published in at the imperial command, containing nonical books, imperial geneal tory. Chrestomathies, too, have ed. The 12th section consists o ries. These are arranged according number of the *pu-sheu* (classifics) which contain: the *Hain-pieu-thung-hoei*, 707; *pien*, 543; *Yu-pien*, 542; *Shu-wen*, by chin, 540; *Hoang-wu-ching yan*, 500; *pien-chan-tsung*, 454; *Pien-hai*, 444; *sse-hai-pien*, 439; *Lu-shu-pen-y*, 360: *eul mo-tse*, 813 (with European pro by P. N. Trigaud, 1626); *Tse-wei*, 214; *yun*, 206; *Pien-hai-lui-pien*, 97; *Tse-t* by Li-tsung-tcheu, 89; and *Lu-shu-fu*, 83. of the most remarkable among a large of similar works, is the *Eul-ya* of kung, which treats of ancient images, and from the 11th century B. C. The most universal dictionary in any langu *Si-wun*, by Hi-si, written under the B. C.; though the meaning of the si

[illegible] l by lexicons within 300
[illegible] There are in the *Shu-*
[illegible] families) 10,000 sin-
[illegible] out much order, un-
[illegible] ording to ancient fig-
[illegible] in. A. D. 150. Some
[illegible] ideophono-
[illegible] work is often
[illegible] The [illegible]*u-phin*, under the
[illegible]), the *Kuang-wun*, un-
[illegible] 010), and the *Tsi-wun*,
[illegible] 961), are important
[illegible] were made by the
[illegible] so that the *See-ma-*
58,615 (A. D. 1054). This was
[illegible] *'Ung-yun-tsi*, under the em-
[illegible] the *Yuen-fui*, under the Yuen
[illegible]; the *Chun-wu* or *Yun*, under
[illegible]; and the *'U-chi-vun-suei*
[illegible] ed ch [illegible] l
[illegible] ar-
[illegible] a [illegible] of
[illegible] this work,
with the sp [illegible] language
[illegible] ns are n [illegible], and
[illegible] given.
[illegible] diction-
[illegible] i-ving-
[illegible] 33,000 [illegible] the
[illegible] t Chi [illegible] lexicons, fixing
[illegible] The *Ching-tse-*
[illegible] rtly before the
[illegible] the Mantchoos, is
[illegible] s; it is very intel-
[illegible] ngly with quotations.
[illegible] the greatest of all dic-
[illegible] containing even the
[illegible] sinograms. Khang-
[illegible] into the academic palace,
[illegible] ants during 8 years in com-
[illegible] s ever used, himself correct-
[illegible] mance. The primary letters
[illegible] 106 phonetic classes, as in the
[illegible], with examples from the ancient
work is in 130 thick volumes,
to 600 compound monographs
[illegible] ters; it was printed at the
[illegible], and distributed among the
[illegible] 711). It is very rare, and intel-
[illegible] versed in the knowledge of
[illegible] ruling China. A compendium
[illegible] *u-pien*, was published under
[illegible]). The *Khang-hi-tse-tien*, an
[illegible] cor [illegible] ted edition of the *Ching-*
[illegible] ued (1716) by command of
[illegible] wrote the preface, and it is at
[illegible] dard dictionary of the empire.
[illegible] y sounds and meanings of the
without distinction of their age,
not easily intelligible, and many
[illegible] The *Yu-tang-tse-hoei*, pub-
[illegible] hang-hi, contains more char-
[illegible] other lexicons, with too short
[illegible] l without quotations. It is
[illegible] remembrancer of the sinograms.
[illegible] *yuen-in*, of only 4,000 sinograms, is very useful for finding the common ones and vulgar significations. It is in 12 classes, according to the 12 final sounds, each of which is subdivided into 20 sections, according to 20 sounds of initials, most of the sections having also variations of sound of minor moment. Callery used it principally for sounds and significations. It was published under Khang-hi (1710), and amended in 1834. *Ching-tsé-tung*, by Wang-wu-tshao, who sold it to Liao-wen-ing, by whom it was published as his own, appeared posthumously in 1719. The *Sing-pu-chuan-shu-kuang-tse-hoei*, a new amended edition of an older work, is brief and clear in style, and gives the sublime as well as some vulgar definitions, and both the ancient and modern graphic styles, with few quotations. It was published toward the close of the 18th century, under Khian-lung, and is very rare, though preferred by J. F. Davis to Khang-hi's dictionary. The *Y-wen-pei-lan*, printed with most beautiful types, in ancient and modern styles, with precise meanings but without quotations, was published at the commencement of the present century. It is the best for beginners. Rémusat employed the *Tsing-wen-kien*, the *Tching-tsé-tung*, and the *Tchung-yung* of 1817, then the only textual lexicon in Europe, with Mantchoo, Latin, and literal versions. An excellent work is the *Nan-pe-kuan-hoa wei-pen* (South-North Official Speech), by Tchang-yu-tcheng (1820). Among tonic dictionaries are *San-yun-i-tchi*, *Thung-wen-to*, and *Fan-yun* (Cantonese Divider of Sounds), with 33 orders of terminations, in 3 or 4 classes of tones. The *Shi-wu-yin* (10+5 sounds) of Amoy is classified under 50 final sounds, subdivided by 15 initials. The *Hung-mao-hoá* (Red Hair Speech) contains Anglico-Cantonese corruptions, as for instance, *kum* for "come." The *Wu-che-yun-fu* is the greatest phonetic lexicon, giving the minutest intonations, scarcely perceptible by natives themselves. The 13th section consists of mathematical works, and in these the Chinese, notwithstanding their practical genius, are very deficient, scarcely going beyond the 4 arithmetical species (see numerals, above). Astrology takes the place for the most part of astronomy. They reckon 12 signs of the zodiac, 28 constellations, and 7 planets. The stars are thought not to move, and solar eclipses frighten them. There are, however, celestial maps. Almanacs were introduced by the Mohammedans, modified by the Jesuits, and are now prepared at the Pe-king observatory. It is sufficient to mention *Pao-king-thu* (Precious Mirror), furnished with illustrations; *Shan-pu* (Dice Doctrine); and *Tchang-shu* (Book of Mysteries), published in 1684. IV. The department of belles-lettres forms the most important class of works in respect to Chinese social life. *Siao-chue* (small talk) is the name of light literature, and, in modern times, also of popular scientific books. Though the style be pure, the contents of many popular works are unchaste, trivial, devoid of interest and of high sentiment. The *Liao-chai* (Relaxation from Study),

in 16 volumes, contains short stories, most of which turn on magic and ridiculous incidents. The works of this class are threefold: prose fiction and romantic poetry, lyrical poetry, and the drama. The *Khai-pi-tchuan* (Præ-historic), by Tchung-pe-king, narrates history from the creation to 1122 B. C. Lie-kue-tchi wrote tales of rebel provinces from 1148 B. C. to A. D. 258. The *Sui-thang-yan-yi*, by Lin-han, relates events from A. D. 581 to 906; *Thang-yan-tchuan*, by Ku-yu-lian, the history of the Thang; the *Thang-'u-tai-tchuan*, the end of that dynasty and the 4 succeeding dynasties (907–950). The *Ling-nan-sse* is the history of troubles in the Canton province (16th century). The fanciful travels of the emperor Ching-ti were translated into English by Thin-shen, Macao, 1842. Most valued are the *Sse-ta-kéi-shu* (4 Great Marvels' Books), or *Sse-tshai-tse* (4 *Beaux esprits*), which consist of the *San-kúo-tchi-yan-'i* (3 Kingdoms' History), by Tchui-sheu (A. D. 220), a work interesting to mature persons; the *Shui-hu-tchuan* (Coast History), by Tcheu-sheu and Li-kuon-tchung (11th century), stories of pirates on the coast of Kiang-nan, agreeable to youth; the *Si-yeu-ki* (Voyage to the West), by the Buddhist Tching-hiun-tshang; and the *King-phing-mei*, a biography of a prodigal grocer. The 2 former are reproduced in the *Shi-tshai-tse* (10 *Beaux esprits*), which also contains the *Hao-khieu-tchuan* (the Fortunate Union), translated into English by Davis (1826); the *Yu-kia-li* (the 2 Cousins), in French by Rémusat (1826), in English and German (1827); the *Ping-shang-leng-yan* (the 2 Students and 2 Learned Girls); the *Hoa-tshian-tchin* (Chinese Courtship), published by Thoms, at Macao (1824), translated into German (1836); the *Thung-kuei-tchuan* (Victory over Demons); the *Pe-kuei-tchi* (Tablet of the Yellow Jade); the *Pe-she-tsing-ki*, translated by Stanislas Julien (1834) under the title *Blanche et bleue, ou les deux couleuvres fées*; *Kin-ku-khi-kuan* (Modern and Ancient Events); *Lung-tu-kung-ngan*, a selection of celebrated lawsuits, dialogued dramatically; and the *Hung-lau-mung* (Dreams of the Red Chamber), relating the lasting resentment of Miss Keau-lwan-wang, by Sloth (Canton, 1839). The first German version of a Chinese novel was that of the *Hao-kjo-tschuen*, by Murr (1765), from an English copy. The Chinese novels are made tedious by many details, consist mostly of dialogues, mingle trifles with moral reflections, and abound in sports, feasts, promenades, lawsuits, and school examinations, winding up with a marriage. Their heroes are paragons of all imaginable virtues and civilities, fascinating, learned, &c. The lyric poetry of the Chinese is contained in the *Shi-king* and in many anthologies. The "Eulogy of Moukden" by Khian-lung (see above) is one of the longest poems. He also wrote a eulogy of tea. The most noteworthy collections are the *Tshian-teng-shi*, containing more than 1,000 lyrics of the Augustan age of Chinese letters, under the Thang (618–906), published at imperial expense in 9,000 volumes. Thei-fu and Li-thai-pe, the latter a great wine-drinking Adonis, who went to heaven on a whale, author of 30 volumes, were prominent poets of that period. This collection was republished by Khang-hi (1707), who also ordered the edition of the *Yung-we-shi*, containing the lyrics of all times, arranged according to their subject matter. Another great collection is the *Ku-wen-yuan-kian*. A prolific poet (250 B. C.) wrote an anagram of about 800 sinograms, legible downward, upward, to the right and left, and diagonally. There are also anthologies of female poets; for instance, the *Pe-mei-shi-yung*. The *Sho-hio* (10 Doctrines, 1697) is a thesaurus of poetic phraselogy, a *gradus ad Parnassum Sinensem*. The *Yun-ngen* (Canton Poems) contains the popular songs of that region. Punning and extempore rhyming are much in vogue. The Chinese dramatic poetry was first made known to Europeans by P. Prémare. The imperial library in Paris has a *Yuen-tchin-pe-tchung*, a collection of 100 Mongol dramas (1279–1378), from which all European versions have been made. Buddhism is considered the progenitor of the Chinese drama. The emperor Hiuen-tsung, a Thang, is believed to have been the first dramatist; others attribute this honor to Wen-ti, the first Sui. Bazin divides the history of the Chinese drama into 3 periods: under the Thang (720–905), when the *tchuan-ki* (marvellous pieces) predominated, consisting more of machinery than of dialogues; under the Sung (960–1119), when the *ki-kio* (sung pieces) predominated; and under the Kin and Yuen (1123–1341), marked by the predominance of the *tsa-ki* and *yuen-pen*, pieces of a mixed character. In the 3 former kinds one principal personage sang the action, while in the *yuen-pen* 5 persons participate. The most fertile dramatist was Kuan-han-king. Among the principal dramatic pieces are *Si-siang-ki* (Eastern Pavilion), in 20 acts; *Pi-pa-ki* (Story of the Lute), by Kao-tong-kia, performed first at Pe-king in 1404, translated into French by Bazin (1841); *Hoei-lan-ki*, translated by S. Julien (see above); *Tchao-shi-ku-eul*, the original of Voltaire's *Orphelin de la Chine*, translated under the title of *Orphelin de la maison de Tchao*, by S. Julien; *Lao-seng-eul* (the Heir in Old Age), into English by Davis (1817), into French by De Sorsum (1818); *Han-kung-tshien* (Sorrows of the House of Han), by Davis (1829); *Tchao-mei-hiang*, by Bazin, in his *Théâtre Chinois* (1838). The dramas are not divisible, as with us, into tragedies, comedies, operas, &c., being mostly dialogued *ki* (memoirs) or romances. They abound in descriptions of fights and great sights, are intermixed with songs, ballets, myths, puns, and grotesque allusions, and are recitative in prose and verse. The song is a sort of Greek chorus, with or without noisy music. Many pieces are digressive, with little or no plot, but horrible, full of murders and executions. Fireworks and men disguised and personating animals are much admired (for example, the "Marriage of the

,” as witnessed by Macart-
792). Barrow reports the
bscenities. Scenery and
e or wanting, but the
Performances take place
he palaces of the rich, in
in public squares, and be-
always in the daytime.
choice of the audience,
of the troupe, and fol-
half of the day. Com-
(about 100 at Pe-king)
ll about for hire, mostly in
n provinces. The best ac-
-king.—Unreserved publi-
matters in the many news-
h the *King-pao* (Court Ga-
most powerful state en-
which is anxious to influ-
opinion on all important
y, or the science of Chinese,
f modern date among Euro-
was the first European travel-
. In treating of the litera-
refer only to books, omit-
cals, such as the “Trans-
yal Asiatic Society,” “Indo-
“Chinese Repository,” and
, German, &c., journals
iterature. De Ursis, Ad.
— Athan. Kircher, Th. Spi-
Mentzel, J. Webbs, F. S.
oldest writers on this
oetta, Herdtrich, Rouge-
ublished *Confucius Sinarum*
. Father Fr. Varo
in 1703, *Arte de la lengua*
are many anonymous gram-
ries in the French na-
otitia Linguæ Sinicæ,
l Kingsborough's expense (Ma-
excellent work. F. Noël's
i Classici appeared at Prague
yer's *Museum Sinicum* (1730)
mation inaccurately given.
ationes Sinicæ (1737), full of
Linguæ Sinarum Mandar.
Duplex (1742), are pompous
ect views; but the latter con-
ul historical lists of MSS. at
, the father, endeavored to
se were an Egyptian colony.
he *Mémoires des anciennes*
, Gaubil, Du Halde, and De
ble works. Ph. Masson tried
on between Chinese and He-
wrote *Le génie de la langue*
1773). Father Amiot wrote
sur le génie de la langue Chi-
vec celle des Égyptiens (1773);
d the *Éloge de Moukden* (see
orks of Sir William Jones, Webb
Greek language borrowed from
ler (on the measurement of
e, &c.), Langlès (on element-
Paris library), Murr (*Hao-kjoh* and *Litteræ patentes Imper. Khang-hi* 1802), S. P. Ign. Kögler (*De Bibliis Judæorum Sinensibus*), Jos. Hager (*Panthéon Chinois, Pien-hoe-ye, et monument de Yu, suivi de 32 formes d'anciens caractères*, sharply criticized by J. Klaproth), and the *Choix des lettres édifiantes des missions* (Paris, 1808), are of some use for the student. Sinology in real earnest may be dated from J. Marshman's “Dissertation on the Chinese Character,” &c. (Serampore, 1809); “Works of Confucius,” with a brief grammar (1809); and *Clavis Sinica*, with the *Ta-hio* (1815). The labors of J. P. Abel-Rémusat, consisting of an *Essai sur la langue Chin.* (1811), *Éléments de la gram. Chin.* (1822), treatises on the *Ku-wen* and *Kuan-hoá*, and a profusion of good articles in periodicals, made an epoch in sinology. Montucci contributed much to its progress, exposing also the errors of Hager and De Guignes, the son. Jul. Klaproth, a friend of both the preceding, did more than the Italian by furnishing a supplement to the dictionary of Glemona and De Guignes, by correcting erroneous views spread by others, and by illustrating variously the Chinese, as well as kindred glossological and ethnographical points. De Guignes's *Han-tsé-sy-y* (*Sinicorum Characterum Europæa Interpretatio*), *ou dictionnaire Chin.-Franç.-Latin* (1813, folio), is a thick, clumsy, indigested copy of Father Basil de Glemona's vocabulary, itself a copy of collateral lexicons. We will only touch on the most prominent later works on the subject. Rob. Morrison's grammar (Serampore, 1815) is rather Anglicized Chinese; his dictionary (Macao, 1815–'23) is a version of a Latin lexicon; his translation of the Bible is a mere reëdition of one made by a Jesuit; his “Vocabulary of the Canton Dialect” (1828), “Chinese Miscellany,” “Dialogues” (1816), *Horæ Sinicæ*, and “View of China,” are useful works. Milne (“Sacred Edict”), J. F. Davis (“Chinese,” 4 vols., 3d edition, 1844; many translations of novels, dramas, moral maxims, &c.; “Eugraphia,” &c.), G de Humboldt (Letter to Rémusat, 1829), J. A. Gonçalvez (*Arte China*, &c., Macao, 1729; *Diccionario Portug.-Chin. e Chin.-Portug.*, 1831; 3 Latin-Chin. dictionaries, 1836–'41; *Gram. Latina ad usum Sinensium*, 1828; and other works which rank him with Prémare, Rémusat, and Morrison), Levasseur and Kurtz (*Tableaux des éléments vocaux*, 1829), S. Julien, the greatest of sinologues, author of many often quoted works on Chinese, and translations from it (treatises on analysis, syntax, lexicography, versions on the silkworm, mulberry tree, porcelain, *dioscorea batatas*, and technology), Jul. Mohl (edited some of the *King* in German), Cat. Jannelli (*Testamen. Hermeneut. in curiam Sinogram.*, Neapoli, 1830; it abounds in delusions; some of its false notions concerning the sinograms are corrected by Peter S. Duponceau, Philadelphia, 1838), Dyer (vocabulary of the Hokkien dialect, 1838; he, Stronach, and Sloth edited Æsop's fables), Dean (first lessons in Tiechiew, 1841), E. Rautenbach (a pamphlet on the language, 1835), Medhurst (a good dictionary

of the Hokkien dialect, Macao, 1832; notes on Chin. grammar, Batavia, 1842; Chin.-English dictionary, 2 vols., Batavia, 1843), J. M. Callery (*Systema phoneticum script. Sin.*, Macao, 1842; *Dictionnaire encyclopédique de la langue Chinoise*, 1844; these works were a great step in advance), Bridgman (Chinese chrestomathy, Canton dialect, Macao, 1839–'41), S. Wells Williams ("Middle Kingdom," London, 1841, New York, 1848; "Easy Lessons," &c., Engl.-Chin. vocabulary, Macao, 1844), Rob. Thoms (Chin.-Engl. vocabulary, Canton, 1843; *Han-tsu-thso-yao, Exercises sur les phonétiques*, Paris, 1845); Steph. Endlicher (*Anfangsgründe der Chin. Gram.*, Vienna, 1845, excellent; *Index zum Atlas von China*); Bazin (*Mémoires sur les principes du Chinois vulgaire*, 1845, and many translations, especially of dramas), Rochet (*Manuel prat. de la langue Chin. vulg.*, 1846), Wilh. Schott (*Chin. Sprachlehre*, Berlin, 1857; many articles in periodicals; *Verzeichniss der Chin. Bücher der königl. Bibl. zu Berlin*), Lay, J. L. Schuck, L. L. de Rosny, Neumann, and Hernisz, may be mentioned, with many others whose works have been previously referred to in this article. Chinese professorships exist now in Paris (since 1815), Berlin, and Munich. St. Petersburg is very rich in Chinese and Mantchoo MSS. In the archives of Moscow there is one of the most complete vocabularies in existence, with Latin, French, and Japanese interpretations, presented by the Jesuit D. Parrenin.

CHIN INDIA, sometimes called the peninsula beyond the Ganges, is that part of Asia lying between China and Hindostan, and comprises the Burman and Anamese empires, Laos, Siam, and the peninsula of Malacca.

CHINON, an arrondissement and town of France, department of Indre-et-Loire; pop. of the former in 1856, 89,600, and of the latter, 6,922. The town is pleasantly situated on the right bank of the Vienne. The principal public buildings are the town hall and the communal college. Henry II. of England died there, and near it Rabelais was born. The ruins of the castle where Charles VII. resided when Paris was occupied by the English, and where Joan of Arc presented herself to that monarch, are still seen. The principal articles of trade are grain, wine, prunes (called prunes of Tours), and other dried and fresh fruits.

CHINSOORA, CHINSURA, or CHINSURAH, a town of British India, province of Bengal, on the right bank of the Hoogly, 20 m. above Calcutta; lat. 22° 53′ N., long. 88° 23′ E.; pop. 14,000. It extends about ½ m. along the river, is neatly and solidly built, and is an important station for European troops. The barracks, hospital, and other buildings connected with the military establishment are on a magnificent scale, and since March, 1858, have been greatly enlarged. The barracks are intended to accommodate 5,000 men. Beside the Hoogly college, a government institution, the town has several schools and a chapel. It is famous for the manufacture of cheroots. It was settled by the Dutch in 1656, and in its small, quaint-looking dwellings, bears many traces of its founders. In 1759, the British under Col. Forde defeated near here a Dutch force which had attempted to check their march on Chandernagore. When Holland became a province of France in 1795, the British offered to retain Chinsoora for the stadtholder, but their proposition being rejected, they took it by force, and retained possession until the peace of 1814. It formed part of the territory ceded to the British by the king of the Netherlands in 1824, in exchange for possessions in the island of Sumatra.

CHIOBBE, a town in the province of Fo-kien, China, 15 m. S. W. of Amoy. It stands on a river known by different names in the different districts through which it flows. At this point it is about 300 yards wide, and navigable at high water for junks of 400 tons. The town is large, contains a custom house and citadel, and its river front is fortified. It is a great emporium for common china ware, and the district of Leung-kei in which it stands is noted for the cultivation of the mulberry tree and the rearing of silkworms. The inhabitants are extensively engaged in the fisheries and in agriculture. In the vicinity of Chiobbe are 18 villages, one of which, in 1850, contained a body of Roman Catholics under the care of a Spanish missionary. Pop. of the town estimated at 300,000.

CHIOGGIA, or CHIOZZA (anc. *Fossa Clodia*, and *Clugia*), a seaport town of Austrian Italy, in the Lombardo-Venetian kingdom, on the Adriatic; pop. 27,076. It is situated on a small island at the S. end of the lagoon of Venice, a little N. of the embouchure of the Brenta, is built partly on piles, and communicates with the mainland by a low stone bridge of 43 arches. It is a bishop's see, the capital of 4 communes, and the centre of an active trade. The harbor, which has 17 feet of water, is considered one of the best fortified in the vicinity of Venice, being defended by a number of batteries and the 2 forts of Caraman and San Felice. It is usually crowded with fishing and coasting vessels, in which a large part of the population find employment. The town contains several churches, 2 of which are large but somewhat dilapidated. There are numerous schools, a theological seminary, orphan asylum, hospital, workhouse, theatre, custom house, ship yards, salt works, and manufactories of lace, cordage, and other articles. Titian is said to have found models for some of his finest works in the women of Chioggia, who have long been noted for beauty, and Leopold Robert and other modern painters have often resorted for inspiration to the same source. In 1369 the Geno took possession of the island, but after a st of 2 years, to which the name of the w Chioggia has been given, were forced to y it to Venice.

CHIOS. See SCIO.

CHIPMAN, NATHANIEL, LL.D., an A jurist, born at Salisbury, Conn., Nov. [illegible] died at Middlebury, Vt., Feb. 15, 1843. He d at Yale college, and during his senior tained a lieutenant's commission in rican army, was on duty at Valley the memorable winter of 1777–'8, present at the battle of Monmouth. g his commission, Oct. 10, 1778, he re- Litchfield, Conn., and was admitted to in March, 1779. He then removed to h, Vt., where he commenced practice, ed as state's attorney for 4 years. He ember of the general assembly from h in 1784–'5. In 1786 he was elected judge of the supreme court, being the yer who had been placed upon the bench ont. In 1789 he was elected chief jus- l held that office until Oct. 1791. In was also appointed one of the commis- o adjust the differences between Ver- d New York. In 1791 he was a mem- e convention called to decide the ques- t Vermont should accede to the an. 18, 1791, he was appointed a ner with Lewis R. Morris to and negotiate for the admission into the union. In Oct. 1791, he by President Washington judge court for the district of Vermont. published a small work entitled the Principles of Government," e of "Reports and Disserta- ning reports of cases decided hief justice, with dissertations on opting the common law of Eng- statute of offsets, on negotiable notes, he statute of conveyances. He resigned e of district judge in 1793, and resumed at the bar until October, 1796, when n elected chief justice of the supreme 1796 he was appointed one of a com- revise a code of statute laws for Ver- revised laws of 1797 were written by Oct. 1797, he was elected a senator in for 6 years from March 4, 1798. In was chosen one of the council of cen- examine the state constitution and to h amendments as they might judge . In Oct. 1813, he was again elected ice of the supreme court, and continued 2 years. From 1816 to 1843 he was r of law in Middlebury college. In published "Principles of Government; ise on Free Institutions, including the ation of the United States," containing s of his former treatise.—DANIEL, LL.D., erican jurist, brother of the preceding, Salisbury, Conn., in 1762, died at Rip- April 23, 1850. He was graduated college in 1788, was admitted to ddlebury, Vt., in Sept. 1790, and d law for many years. He was attorney for Addison co. for 8 years sub- t to 1797, for a long period represented in the legislature, and was elected of Congress in 1815–'17. He was of law and jurisprudence in Middle- from 1806 to 1816, when he was succeeded by his eldest brother Nathaniel. He was the first official reporter of the decisions of the supreme court of Vermont, and in 1824–'5 published 2 volumes of reports. In 1822 he published the first edition of "An Essay on the Law of Contracts for the Payment of Specific Articles;" in 1849, memoirs of Col. Seth Warner and Gov. Thomas Chittenden; and in 1846, a biography of Nathaniel Chipman.

CHIPPEWA. I. An E. co. of the upper peninsula of Michigan, bordering on Lakes Superior and Huron, and bounded E. by the river St. Mary. The surface is hilly and partly covered with forests of pine. Pop. in 1850, 898. Capital, Saut St. Marie. II. A N. W. county of Wis., bordering on the Mississippi river, traversed by the Chippewa and several affluents; area about 4,300 sq. m.; pop. in 1855, 838. Sandstone is abundant, and much of the surface is well wooded. In 1850 the productions were 9,522 bushels of wheat, 9,655 of corn, 16,644 of oats, and 1,302 tons of hay. Organized in 1845. Capital, Chippewa Falls.

CHIPPEWA, a village and port of entry, pop. about 1,200, in the township of Willoughby, co. of Welland, Canada W. It is situated at the confluence of the Chippewa and Niagara rivers, 2 m. above the falls, and contains an extensive steam engine manufactory, and one of the largest factories of stoves in the province. In 1850 the value of its imports amounted to $818,152, of which $816,204 were from the United States. The value of its exports, all of which were to the United States, did not exceed $7,528.—At this village, on July 5, 1814, a battle was fought between a portion of the American army under Gen. Brown and the British force under Gen. Riall. Preparations having been made for a second invasion of Canada, Gen. Brown lay at Buffalo, with a force composed of 2 brigades of regulars, respectively under the command of Brig. Gens. Winfield Scott and Ripley, Hindman's field battery of 7 guns, and a brigade of Pennsylvania and New York volunteers, with a few Indians of the Six Nations, under Brig. Gen. Porter—3,500 men in all. Riall, the British commander, had a camp of about 2,500, including the 100th and royal Scots foot, some cavalry, 9 field pieces, and a number of Canadians and Indians, in immediate contiguity to the field, separated therefrom by the Chippewa, which at that point was bridged. Two miles higher, Street's creek also flowed into the Niagara, and was likewise crossed by a bridge near its confluence. Between these 2 streams lay an open plain of 2 miles area, the Niagara in front, and a forest of pine in the rear. This was the battle ground. Early in the morning of July 3, the American forces silently crossed the Niagara river and surprised Fort Erie, garrisoned by but 140 men, who surrendered without firing a shot. Pushing forward, next day, along the bank of the river, Scott's brigade leading the advance and driving in the British outposts under the marquis of Tweeddale, the American army reached Street's

creek and drew up on its nearer bank. Gen. Brown determined to attack the British in their position. Apparently the British commander had intended a similar operation against the Americans; for the morning of the 5th beheld both armies deploying into the open plain, the one across the creek bridge, the other across the bridge of Chippewa. Porter's brigade was first across, and proceeded toward the forest on the left, which movement drew Riall out to attack him. A detachment of Canadian militia moved to the British right, and the battle commenced by an irregular fire between the two militias, which ended by the Canadians retiring discomfited. Riall himself with his main body now advanced, before whom, in turn, Porter retired. Meantime Scott, not aware that the British had crossed into the plain, advanced to the creek bridge, whence he perceived them drawn up in order of battle. Rapidly deploying across the bridge, he placed his forces in position, the 1st battalion under Leavenworth and the 2d under McNeil, in front of the British left and centre, while the 3d battalion under Jessup moved obliquely to the left to attack the enemy's right, which was stationed in the woods and threatened to outflank the Americans. Both armies marched steadily as if on parade to within 80 yards, when firing burst forth along both lines. Scott, who had been manœuvring to bring his battalions obliquely against either wing of the British, here displayed an act of personal bravery which much inspirited his men, by spurring between the lines of fire to Towson's battery to inform him that the enemy had advanced inside his range of fire. Towson altered the range of his guns, and, just then, blew up an ammunition wagon. Taking advantage of the confusion occasioned by the incident, Scott shouted to McNeil's battalion: "The enemy say we're better at long shot than steel. Eleventh, give the lie to the slander—charge! charge the rascals!" The battalion did charge, and striking the British line obliquely, broke it to pieces, while Leavenworth's battalion did the same on the left. Meantime Jessup, finding himself outflanked, ordered his men to advance, which they did with great steadiness, throwing in effective volleys. Gen. Brown had hurried off for Ripley's brigade, but before it could be brought up the day was won, and the enemy in full retreat across the Chippewa, burning the bridge behind them. The forces actually engaged were: British, 2,100; American, 1,900. British loss, 138 killed, 365 wounded, total 503; American loss, 68 killed, 267 wounded, total 335. This engagement was a fair fight between equal numbers on an open plain, where the generals had equal opportunity for strategy, and the troops for display of their qualities. The prestige was certainly with the British, who were mostly seasoned troops from the European wars. Victory was undoubtedly owing to the admirable discipline of the Americans, no less than to the skilful dispositions of Gen. Scott, to whom the
victory belongs, Brown not being e l. Th
British general did not seek to te
passage of the Chippewa, but re
Burlington heights, near the head o
Ontario.

CHIPPEWA, a river of Wisconsin, called b
the Indians the Ojibway, or Ojibbeway. I
rises in the N. part of the state, flows in a S. W
direction through a country mostly cov
with pine forests, and after a course of o
200 m., enters the Mississippi near Lake Pepi
85 m. below St. Paul, Minnesota. It is
500 yards wide at its mouth.

CHIPPEWAS, or OJIBWAYS, a tribe of
ican Indians, the type of the Algonquin
occupants from our earliest historical period
the basin of Lake Superior, N. and S. Th
name appears first to have been applied to
tain Nipercinean bands who encamped on
banks of the St. Lawrence river, opp
Montreal; and it became a generic one
tribes speaking the same, or dialects of
same language. They were found in
when the French advanced their discoveries
the falls of Sault Ste. Marie, and held the
try from the mouth of Green bay to the
waters of Lake Superior. The French fo
an early and unbroken alliance with them,
ascribed to them a degree of progress sup
to that of any other tribe inhabiting the n
ern latitudes. They learned their l
which they called the court language of
aborigines, and spread their praises thro
Europe. The Chippewas still retain th
liest recollections of the era of French rule,
the strongest attachment to the French
Chippewa tradition relates that their tribe
from the E., and they call the N. W. win
home-blowing wind. Their old capital
Chegoimegon, called by the French La P
near the W. end of Lake Superior. There
great men, Mudjekeewis, Waub Ojeeg,
gweos, and Gitchee Waishkee, lived and
Some traditions state that the tribe k
perpetual fire burning there. Their traditi
reminiscences embrace a large body of m
ogy—the great good and the great bad s
subordinate angelic world, and various
natural giants, sorcerers, and wizards—ill
ting their beliefs concerning life, death, an
mortality. The protracted war between
Chippewas and Sioux was replete with mur
and cruelties unparalleled in Indian hist
A Chippewa tradition thus relates its o
Long before the first visit of white men t
country, there existed at the mouth of the
monee river an extensive Menomonee
governed by a chief of great power and i
ence. Upon the river, in the interior of
country, there were also 4 Chippewa tow
governed by a chief renowned for valor.
Menomonee chief, after the most friendly
tercourse had long existed between the t
gave directions that the river should be sto
at its mouth, in order to prevent the fish,
particularly the sturgeon, from ascending

Thus a famine was caused among the Chippewas of the interior. Remonstrance on their part only produced additional insult, and war began. The Menomonee tribe was supported chiefly by the Sioux, but also by the Potawatomies, Kickapoos, Winnebagoes, Opanangoes, Shawnees, and Wabanakees. The Chippewas at first relied chiefly upon 3 mighty and valorous warriors at Sault Ste. Marie. The war between the Chippewas and Sioux raged with little intermission from 1650, when the earliest French traders and missionaries found it an engrossing tribal passion, to 1830, when it reached a degree of violence which demanded the interposition of the United States government. A new pacification was negotiated between them in 1857. The first treaty between the Chippewas and the United States was signed at Hopewell, Nov. 28, 1785, and was for the purpose of assigning boundaries. They were a party to the treaty of pacification signed at Greenville in 1795, and they made a large cession of land by treaty in 1805, and again in 1808. They took part in the council held at Detroit, in 1815, for the pacification of the N. W. tribes with each other, and with the United States. By a treaty negotiated in 1816, and ratified the next year with modifications, they ceded all their remaining lands in Ohio. The fact that a large part of their territory contained great mineral wealth made it important for the government to obtain it; and by treaties signed in 1854 and 1855, the great Chippewa tribe, then scattered through Wisconsin, Minnesota, and the N. peninsula of Michigan, ceded to the United States nearly the whole of the lands owned by them. A number of reservations, limited in extent, were set apart for the different bands, where it should be the best policy to concentrate and confine them; and every exertion was to be made to induce them to adopt the habits and pursuits of civilized life. Yet both civil officers and missionaries have reported that this tribe shows little inclination to improve the opportunities offered for their education and civilization. They are preëminently expert and brave warriors and foresters, and, living in a land of lakes, are celebrated for the use and artistic structure of both the canoe and paddle; but in general they are contemners of arts, fixed industry, and letters. The use of the bow and arrow, of the war club and spear, they regard as the noblest employments of man, and the adventures and exploits of the chase and of war are their themes of highest praise. In all their history they have looked upon agricultural and mechanical labors as degrading, and have opposed the introduction of schools and plans of industry. They have given little encouragement to Christian missionaries, whom they nervously and restlessly suspect of designing to overthrow their simple and precarious forest system. The Chippewas are a tall, well developed, and good-looking race, and are distinguished for their proud bearing and easy manners. Owing to their dispersion over a vast area, it is difficult to ascertain their full number. In 1780 they were reported to the French government as about 5,000; but this excluded some of their bands which were exalted to the dignity of tribes. When a garrison and Indian agency were established at Sault Ste. Marie, in 1802, those within the bounds of the agency were estimated at 8,500. In 1806 Pike reported their number at about 12,000. In the plan of colonization submitted in 1825, they were comprehensively put down at 18,000; this was inclusive of some Saganaws, who had become almost incorporated into the tribe. Generals Clark and Cass estimated them in 1829 at 15,000. In 1832 Schoolcraft, after careful research, put them at 9,420. In 1850 they were estimated at 10,000.

CHIQUIMULA, Isthmus of, in Central America, extends from the mouth of the Rio Motagua to the innermost corner of the bay of Honduras, comprising about 70 m. of coast on the Caribbean sea. The distance from the Atlantic to the Pacific is here 150 m. Greatest elevation of the land, 2,000 feet.

CHIQUIMULA DE LA SIERRA, a town and capital of a department in Guatemala, Central America; pop. 6,000. The inhabitants are actively engaged in trade, and maize is raised in the vicinity in considerable quantities.

CHIQUITOS, a province of Bolivia, in the department of Santa Cruz, between lat. 14° and 21° S., and long. 55° 30′ and 62° 30′ W., and forming the middle part of a great plain extending N. and S. at the eastern base of the Andes; area, 108,000 sq. m. The surface is low and level, the climate warm, and more insalubrious on account both of swamps and forests, and the country generally uncultivated, and partially uninhabited. Of the 100 nations who inhabited it in the 16th century, when first visited by the Spaniards, only 13 survive, and the native population amounted in 1830 to only 15,316, scattered over 10 stations of Jesuit missionaries, namely: San Xavier, Concepcion, San Miguel, Santa Anna, San Ignacio, San Rafael, San José, Santiago, Santa Corazon, and San Juan. The persevering labors of the Jesuits are fully exhibited in those distant missions in the beautiful aspect of the churches, and the excellent character of the church music, in which the natives take a part.

CHIRIQUI, a river, lagoon, and archipelago of Costa Rica, Central America. The river has a northward course, and falls into the lagoon, which is a spacious bay extending about 90 m. along the coast, and from 40 to 50 m. inland, having 3 entrances, and sufficient depth of water to accommodate vessels of the largest size. The Chiriqui archipelago separates this lagoon from the Caribbean sea.

CHIROMANCY (Gr. χειρ, hand, and μαντεια, divination), the pretended art of judging the character and foretelling the fortune of a person from the aspect of his hand. The elements to be observed are the thumb and fingers, nails, joints, lines, and mountains. There are 15 joints, 3 to each finger, 2 to the thumb, and 1 connecting the hand and arm. There are 4 principal lines. The line of life (*linea vitalis*), which is the most important, curves from the side of the hand between the thumb and forefinger, around the base of the thumb to the centre of the wrist joint. The line of health (*linea naturalis*, or *cephalica*) has the same origin as the line of life, and extends directly across near the centre of the hand. The line of fortune or happiness (*linea mensalis*) is nearly parallel to the latter, and extends from near the base of the forefinger to near the base of the little finger. The line of the joint (*linea rasceta*) is the fold which marks the passage from the hand to the arm. There is a fifth line (*linea hepatica*), not found in all hands, which extends from the middle of the wrist joint to the base of the little finger. There are 7 mountains (*montes*), named after the 7 planets of the ancients. The names of Venus, Jupiter, Saturn, the sun, and Mercury, are given respectively to the elevations at the base of the thumb, and fore, middle, third or annular, and little fingers; the elevation on the lower side of the hand, between the mountain of Mercury (from which it is separated by the line of fortune), and the lower extremity of the line of health, is the mountain of the moon; and the elevation between the mountain of the moon and the line of the joint is the mountain of Mars. Among the laws of chiromancy are the following: The observations must always be upon the person's left hand. If the line or fold of the joint presents 4 distinct, equal, and straight furrows, the person will speedily attain to wealth and honors; if short perpendicular lines proceed from it toward the arm, he will be exiled; if toward the palm of the hand, he will go upon a long journey. If the line of life is regular and deeply colored, it predicts a long and happy life; if it is tortuous, colorless, feebly marked, and broken, it announces ill health and short life; if it is narrow, but long and well colored, it indicates wisdom and ingenuity; if broad and pale, it may be the sign of folly; if deep and unequally colored, it denotes malice; if cut near the centre by 2 slight but well defined transverse lines, it is the sign of approaching death. If the line of health (also called the line of wit) is clear and regular, it indicates excellence of mind and body; if the opposite, it indicates feebleness, timidity, and illness; if tortuous, it reveals an inclination to steal; if interrupted near the middle so as to form a sort of semi-circle, it predicts exposure to great perils from wild beasts. The line of fortune, according to its various phases of distinctness and directness, indicates happiness or misery, and a pleasant or unpleasant natural temper; if it begins close to the upper side of the hand, it indicates pride; if very red in its upper part, envy; if crossed by one line so as to form the Latin cross, generosity; if by several small lines near the middle, duplicity. The line of the triangle, when present, usually promises great success after great difficulties. The mountain of Venus, when smooth and unfurrowed, indicates a happy temperament; that of Jupiter, a heart inclined to virtue; that of Saturn, simplicity of character and love of labor; that of the sun, vivacity and eloquence; that of Mercury, firmness in men, and modesty in women; that of the moon, tranquillity of mind, inclining to melancholy; and that of Mars, courage and heroism. The various lines and shades of color on each of the mountains have special significance. If anywhere upon the palm a system of small lines takes the form of the branches of a tree, it predicts prosperity or the reverse according as the branches incline toward the upper or lower side of the hand. Small lines appearing near the little finger, parallel with the line of fortune, are the *lineæ matrimoniales*, and promise a happy marriage. The milky way (*via lactea*) extends downward on the mountain of the moon from the line of the joint toward the little finger. If this is long apparent, it signifies success in study and the arts, or fortune in a foreign land. The transverse lines on the fingers at the joints modify the portents of the palm. Small white spots on the nails announce happiness and the fulfilment of hopes, at a more remote period according as they are near the root of the nail. —Chiromancy was practised throughout pagan antiquity, was regarded by Aristotle as a certain science, and was in great esteem among the disciples of Pythagoras. The augurs of Rome, and the emperor Augustus himself, practised it. During the later middle ages it was chiefly in the hands of gypsies, and was studied, like alchemy and astrology, by such philosophers as Albert the Great, Cardan, Roger Bacon, and Paracelsus. The church, which passed severe judgments on magical arts, tolerated chiromancy, only forbidding all alliance between it and astrology, and all interference of it with the doctrine of human liberty. A rationalistic view of chiromancy is that all actions, passions, and thoughts leave their traces on the body, and that from the conformation of the hand, its furrows, folds, colors, veins, hardness or softness, an experienced and skilful eye can determine the person's habits, social position, and the stronger tendencies of his character. The most important writers on the subject are Artemidorus (in the 2d century), Coclès (Bologna, 1504), Piccioli (Bergamo, 1578), De la Chambre (Paris, 1653–'54), Prætorius (Jena, 1661–'64), May (the Hague, 1665), Pompeji (Venice, 1680), Ingenbert (Frankfort-on-the-Main, 1742), Peuschel (Leipsic, 1' and especially the anonymous authoress o *Grand jeu de société*, which appeared at in 1845, and contains an account of ancient modern chiromancy, and of one of the distinguished recent chiromantists, Mlle. normand.

CHIRON, in Greek mythology, the wisest all the centaurs, was reputed to be the son Cronus (Saturn) and Philyra, and was born fore the Argonautic expedition. He was ta by Apollo and Diana, and was skilled in botany, medicine, music, and the [illegible] future events. He lived at the [illegible] of Mt. Pelion, in Thessaly, and such was [illegible] for wisdom, that almost all the noble [illegible] of Greece resorted to his cave for in[illegible]ion. Among his pupils were Hercules, [illegible], who was also his grandson, Nestor, [illegible] and Pollux, Ajax, Achilles, Ulysses, and [illegible]des. When the other centaurs were [illegible] to kill his grandson Peleus, Chiron saved [illegible], and it was only by means of Chiron [illegible] Peleus was enabled to obtain his beloved [illegible] for his wife. The Argonauts, on their [illegible]tion in quest of the golden fleece, stopped [illegible] abode of Chiron, were kindly entertained [illegible] and received from him a chart of the [illegible]tions, which he made to assist them in [illegible] navigation. Hercules was one of his fa[illegible] pupils, but it was from his hand that he [illegible] death. Hercules had been fighting [illegible] centaurs, who took refuge with [illegible], and their pursuer, having shot an ar[illegible] at them, unfortunately killed his beloved [illegible]or. Chiron was immortal; but when [illegible] by the arrow of Hercules, he gave up his [illegible]ality to Prometheus, and died.

[illegible]AGO, a co. in the E. part of Minnesota, [illegible]ordering on Wisconsin; area 2,000 sq. m.; [illegible] in 1857, 1,763. The St. Croix, Kettle, and [illegible] are its principal rivers. The surface is [illegible] partly occupied by pine forests. [illegible] chief production.

[illegible] CAROLINE (JONES), an Eng[illegible]d [illegible]ished for her benevolent la[illegible] [illegible]otton, in Northamptonshire, [illegible] 1810. In her 20th year she married an [illegible] of the Indian army, with whom she pro[illegible] to Madras. Prompted by the destitute [illegible]ion of the orphans of British soldiers, she [illegible]ished and managed there, with happy re[illegible] a school for girls and a school of industry. [illegible]38 she removed with Captain Chisholm to [illegible], and at Sydney she found a new call [illegible] exertions in the numerous young wo[illegible]anded there in destitution from emigrant [illegible]. Having obtained an old building for an [illegible] she trained and instructed the girls [illegible] under her charge, and by becoming widely known to the settlers, was able to obtain situations for both men and women. Between 1841 and 1845, she procured employment for 11,000 persons, to whom she had lent in small sums £1,200, the whole of which, excepting £16, was repaid to her. She returned to England in 1846, with thanks and a testimonial from distinguished citizens of Sydney; instituted the family colonization society, by which passage money was paid in weekly instalments; and in many ways planned to relieve emigrants of the poorer classes. She returned with her family to Australia in 1854.

CHISHOLM, JAMES, a clergyman of the Episcopal church, born in Salem, Mass., Sept. 30, 1815, died in Portsmouth, Va., Sept. 16, 1855. His father was a Scotchman, descendant of the ancient clans of Chisholm and Fraser. By his death in 1827 young Chisholm was left dependent upon two elder brothers and a sister. They enabled him to obtain a collegiate education, and he was graduated at Harvard university in the class of 1836. He distinguished himself by his attainments, especially in the languages, learning to converse fluently in German, French, and Italian, and reading and writing the Hebrew, Greek, Latin, and Spanish with ease. But he was more remarkable for a childlike amiability and simplicity, coupled with decision and firmness of purpose. In 1836 he removed to Virginia; was a teacher in Charlestown, Jefferson co., and afterward in Washington city. He then became a member of the theological seminary of Virginia. In 1842 he took charge of two small congregations in Berkeley co.; and there he was married. In 1850 he removed to Portsmouth as rector of a new church. His wife died in Feb. 1855, leaving two sons, one of 5 and one of 7 years. In July of that year the yellow fever broke out in Portsmouth and Norfolk. Mr. Chisholm, sending his sons away, remained faithful at his post; and when all the other churches in Portsmouth were closed by the sickness, death, or removal of their pastors, his continued open. By Sept. 3, the population of Portsmouth was reduced from 12,000 to 4,000, and the deaths in 6 weeks had amounted to 400. On August 31, Mr. Chisholm's younger boy died; but the father labored at home among the sick and dying there. While officiating at a funeral, Sept. 7, he was himself attacked by the fever, and was at once removed to the naval hospital, where he died 9 days afterward. By all who knew Mr. Chisholm his memory is cherished as of a self-sacrificing and devoted Christian, apparently shrinking and timid in character, but a hero where duty demanded the exercise of the highest courage. A memoir of his life, "with memoranda of the pestilence," by D. H. Conrad, was published in 1856, by the Protestant Episcopal society for the promotion of evangelical knowledge.

CHITORE, CHITTOR, CHETORE, or CHITTORGURH, a town of Odeypoor, in Rajpootana, Hindostan, situated on the river Biruch or Beris, over which is a bridge of 9 arches, 80 m. N. W. of Neemutch, and 100 m. S. of Nusseerabad; lat. 24° 52′ N., long. 74° 41′ E. It contains 3 large temples, and a remarkable structure called the pillar of victory, erected in 1439 to commemorate the defeat of the combined armies of Malwa and Guzerat, by Rana Khumbo, who governed Odeypoor from 1418 to 1468. It is 122 feet high, covered with mythological sculptures in white marble, and has 9 stories, the whole surmounted by a cupola. There is also a number of large reservoirs, but the most important feature of the town is its fortress, built on a high scarped rock, and considered a work of great strength. Its walls, though enclosing only an irregular and not very extensive area, are said to describe a circuit of 12 m. Most of the notable buildings are within this enclosure. In 1303 Chitore was taken by Alauddin, the Patan monarch of Delhi, but was soon after given up to the nephew of its former ruler, on condition of his paying tribute to the conqueror, and furnishing the Mohammedan army a contingent of 5,000 horse and 10,000 foot. It was taken by the king of Guzerat in 1533, reconquered and restored to the Rajpoots by the sovereign of Delhi, and stormed by Akbar in 1567, when the garrison, 8,000 strong, after exhausting every means of resistance and all hope of relief, sacrificed their wives and children, and rushing furiously upon the enemy, perished by the sword or were trampled under the feet of elephants. It was afterward recovered by its original masters, was captured by Aurungzebe about 1676, and reverted to Odeypoor on the dismemberment of the empire of Delhi, toward the close of the 18th century.

CHITTAGONG, a district of British India, in the E. part of the province of Bengal, bounded N. by independent Tiperah, S. by Aracan, E. by Burmah, and W. by the Bay of Bengal, between lat. 20° 45′ and 23° 25′ N., long. 91° 32′ and 93° E.; length from N. to S., 185 m.; greatest breadth, 100 m.; area, exclusive of wooded hill tracts on the E. frontier, 2,717 sq. m.; pop. about 1,000,000. It has several rivers, the chief of which is the Chittagong, which is formed by the junction of the Kurrumfoolee and the Chingree, and empties into the bay of Bengal. A great part of the surface is occupied by portions of the great mountain range extending from Assam S. to Cape Negrais, and several of the summits in this district have an elevation of from 3,000 to 8,000 feet above the sea. The climate is similar to that of Bengal, except that the rainy season is longer. The agricultural products, most of which are obtained with little labor, are rice, sugar, hemp, oats, tobacco, mustard, betel nut, indigo, ginger, and coffee. The exports are timber, salt, coarse cloth, and elephants, of which many are annually caught here for the government. The inhabitants are aborigines resembling the Burmese, Bengalese, and Mughs; the Mohammedans outnumber the Hindoos in the proportion of 3 to 2. There are no Buddhists. The mountains are the retreat of several wild tribes whom no government has ever reduced to subjection. During the wars between the Moguls and Afghans, Chittagong was held by Aracan, from which it was conquered by Aurungzebe toward the close of the 17th century. It was ceded to the East India company by the nabob of Bengal in 1760, and has been included in the government of Aracan since the company acquired the latter from Burmah in 1826.—CHITTAGONG, or ISLAMABAD, the capital of the above described district, is an unhealthy, declining place, on the river of the same name. It was once important for trade and ship-building. Three companies of the 34th native infantry were stationed here in 1857, and after the disbanding of the rest of the regiment at Barrackpoor were kept in the service. They remained faithful until Nov. 18, when they mutinied, burned their lines, blew up the magazine, plundered the treasury, opened the gaol, and commenced a search for Europeans, all of whom, however, escaped. The mutineers then marched toward Tiperah, but were met and cut to pieces by a Silhet regiment under Major Byng.

CHITTELDROOG, or CHITTLEDROOG (sans. *Sitala Durga*, "the spotted castle"), a town of Mysore, presidency of Madras, Hindostan, and capital of a district of its own name, 125 m. N. of Seringapatam and 70 m. S. of Bellary; lat. 14° 14′ N., long. 76° 27′ E. It is situated in a fertile plain, enclosed by a circular range of scantily wooded hills, is neither large nor populous, but was formerly one of the strongest places in India. Its fortress, crowning a high rock at the back of the town, is still considered impregnable to native attacks, and is probably one of the completest specimens of rock fortification in S. Hindostan. Its walls of solid masonry encircle it several times with many intricate windings, and completely guard every accessible point. The ascent is performed partly by the aid of notches cut in the rock. Most of the works were constructed by Hyder Ali, who besieged the town in 1776, at which time it was held by a warlike and fanatic tribe called the Beders. During the siege they erected upon the highest part of the citadel a temple to the goddess of destruction, upon whose propitiation they thought their safety to depend, and every week, after solemn rites performed before her image, they rushed forth with desperate frenzy to procure human heads to lay at her shrine. These sallies, though made in defiance of the rules of warfare, were seldom unsuccessful, and when the city was finally taken, 2,000 heads were found piled before the temple. Hyder was obliged to raise the siege, and it was not until 1779 that he obtained possession of the town by treachery. Tippoo Sultan used the fort as a state prison, in which, among many other captives, Gen. Matthews was confined in 1783, after the capitulation of Bednore. In 1809 the sepoy troops stationed here mutinied, seized the public treasure, and marched toward Seringapatam to join the disaffected garrison of that place. They were intercepted by a detachment under Col. Gibbs, and defeated with a loss of between 200 and 300. In the neighborhood of Chitteldroog are some curious caverns, supposed to have been used as dwellings by devotee worshippers of Siva.

CHITTENDEN, a N. W. co. of Vt., having Lake Champlain on the W. border; area 517 sq. m.; pop. in 1850, 29,036. It is drained by Lamoille and Onion rivers, which afford valuable water power, and is traversed by the Vt. Central railroad. Near the lake the surface is generally level, but toward the E. it becomes rough and in some places mountainous. Nearly all the land is fertile, suitable for grazing, or capable of producing corn, potatoes, &c. In 1850 the county yielded 198,598 bushels of corn, 383,118 of potatoes, 57,407 tons of hay, 1,663,456 pounds of cheese, and 838,481 of butter. There were 89

a, 5 newspaper offices, and 7,267 pupils
ig public schools. Capital, Burlington.
TENDEN, Thomas, a statesman of
it, born in East Guilford, Conn., Jan. 6,
ed at Williston, Chittenden co., Aug. 25,
He represented Salisbury, Conn., in the
ure of that state for several years, and
a colonel of militia and a justice of the
he l r office being then and there
on. In May, 1774, he removed
y to Williston, Vt., but in 1776
ed to quit his large and beautiful
exposed to the incursions of the
led in Danby, Vt., until Ticon-
was d in 1777, when he re-
o Pownal, where he resided at the time
le of Bennington. Soon after this he
to Williamstown, Mass., and subse-
resided in Arlington, Vt., until 1787.
a member of the convention at Dorset,
1776, for the purpose of taking into
ation the expediency of declaring Ver-
endent state. At a subsequent
e convention he was a mem-
ttee who drafted the Vermont
independence, and was also one
e appointed to petition congress
the independence of the state.
ng member of the convention at
2, 1777, which formed the first
of Vermont, and was president of
ty, which was vested with all
government, executive, legisla-
judicial, to be exercised until the
nt should be organized under the
n. In 1778 he was elected the first
Vermont, which office he held with
on of one year till his death. A
him, with a history of the constitu-
Vermont during his administration, was
d at Middlebury, Vt., in 1849, by Daniel
—Martin, 2d son of the preceding,
lisbury, Conn., March 12, 1766, died
n, Vt., Sept. 5, 1840. In May, 1776,
with his parents and brothers and
in all—to Williston, then a wilder-
He was graduated at Dartmouth college
and, his health not admitting of his
a profession, commenced farming at
Chittenden co.; was appointed a jus-
the peace in Oct. 1789; clerk of the
court, Feb. 7, 1790, to 1793; represent-
om Jericho, 1790, and for six successive
d several times afterward; was a mem-
he convention in Vermont that adopted
tution of the United States; appoint-
e of the county court, and reëlected
and then appointed chief judge of
court, and reëlected 7 years succes-
n 1803 he was elected member of con-
d received 4 reëlections. From 1813
5 was governor of Vermont, and
, in 1821–'22, was judge of probate.
deputy marshal, and, as such, took
of Chittenden co. He discharged
public functions with marked ability.

CHITTY, Joseph, an English lawyer, born in 1776, admitted to the London bar in 1816, died in 1841, was eminent in his day as a special pleader, but has a more enduring fame as a writer of legal text books, indispensable to students and practitioners in English law. His chief works are a "Treatise on the Parties to Actions and to Pleadings" (1st edition, 1809, and 6th edition, 1837); "Treatise on the Law of Nations relative to the Legal Effects of War on the Commerce of Belligerents and Neutrals, and on Orders in Council in Licenses" (1812); a "Practical Treatise on the Criminal Law" (1816, 4 vols.); a "Synopsis of Practice in the King's Bench and Common Pleas" (1816).

CHIUSI (the *Camars* of the Etruscans, and *Clusium* of the Romans), an Italian city, in Tuscany, on a hill in the valley of the Chiana; pop. 2,200. It was the ancient capital of King Porsenna. Its decline was caused in the 11th century by the accumulation of the waters of the Chiana, which changed the surrounding valley into a pestilential marsh. Dante (*Paradiso*, xvi.) described its depopulation. The valley was drained by works completed in 1823, and Chiusi is now the seat of a bishopric. It has several rich museums of Etruscan and Roman antiquities.

CHIVALRY, an institution of the middle ages, which exhibits a peculiar distinction of modern thought and manners, as opposed to those of antiquity. No institution has exercised a greater influence on the world, yet of its origin nothing is certainly known. Perhaps the most reasonable view of that origin is Guizot's, that chivalry "was the progressive development of ancient facts, the spontaneous consequence of Germanic manners and feudal relations." Many of the facts connected with it undoubtedly existed long before chivalry, as such, was known. If not the offspring of the feudal system, it was connected with it, and could not have existed under any other social state. That it prevailed among some of the barbarian peoples who overran the Roman empire is a fable, though some of its customs were known to those barbarians, and so were some of the ideas that animated its votaries. Those who are most disposed to attribute the origin of chivalry to remote times do not give it an earlier date than an age in which the world had ceased to feel the weight of that empire's shadow. In the 8th century of the Christian era the descendants of Rome's conquerors had lost much of the peculiar character of their races, and were not likely to be largely influenced by things of which they had no positive information. What related to arms and war they had more generally retained, and, as occupants of lands they had won by the sword, they formed ruling classes, bearing a strong resemblance to the Norman conquerors of England of a later time. Some of them were bound to serve on horseback, and were called *caballarii*, of which chevaliers is a corruption. Accustomed to receive arms on arriving at manhood, with solemn usage, after the manner of their ancestors, they formed the chivalrous classes of the earlier times; and when chivalry, as it was subsequently understood, began to have a definite form, its proceedings, or modes, accorded strongly with those of days with which it had little else in common. Chivalry, in its specific sense, dates from about the middle of the 10th century. Its origin was not unlike that of the orders of knighthood which are so intimately associated with its history. As those orders grew out of the desire of men of strong feelings to remove or to lessen certain evils, so did the institution of chivalry grow out of the wish of individuals to apply a correction to more extensive evils that existed at an earlier period. Some brave men of the ruling races, and who were thoughtful and humane as well as brave, united themselves for the purpose of protecting the weak, devoting their swords to the work. Courage was one of their chief virtues, for without it their undertaking would have been childish. Chastity would be enjoined, for it is the sentiment of noble minds to respect woman, and she stood in peculiar danger in an age of brute force. Of all the weak, she appealed most strongly to the chivalrous adventurer; and this sentiment, coupled with that feeling of regard for woman which was common to the northern nations, finally produced that devotion to the sex which was the strongest manifestation of chivalry. The effect of this was to elevate the knightly character, and to exalt it to an almost incredible pitch. "He who loyally serves his lady," says one of the writers of chivalrous romances—and the words are appropriately placed in a woman's mouth—"will not only be blessed to the height of man's felicity in this life, but will never fall into those sins which will prevent his happiness hereafter. Pride will be entirely effaced from the heart of him who endeavors by humility and courtesy to win the grace of a lady. The true faith of a lover will defend him from the other deadly sins of anger, envy, sloth, and gluttony; and his devotion to his mistress renders the thought impossible of his conduct ever being stained with the vice of incontinence." We are not to understand that this is a literal picture of the sexual relations in the age of chivalry, but that it expresses the chivalrous ideal, which it is creditable to the men of that age that they should have sought. That they fell far short of it is true, but in that respect they were neither better nor worse than other men. Their aspirations were good, and were productive of good both to themselves and to woman. It is the more remarkable that such sentiments should have been common with the ruling classes in one of the hardest and most brutal periods of the world's history; and we can form some conception of the condition to which society must have fallen but for chivalry, when we see upon what state of things chivalry was, as it were, embroidered. It strikes us all the more forcibly because of the dark ground on which it appears. But it was inevitable that the morals of chivalry should partake of the character of the times in which it existed; and accordingly we find that the popular literature of those times, which furnished the only intellectual amusement of knights and ladies, was thoroughly licentious, and indicative of the most impure intercourse of the sexes. To valor and beauty every thing was permissible, and the marriage vow was little regarded. So was it with respect to other matters. One of the vows of knights was to protect the just right of the weak, such as widows, orphans, and maidens; yet it is beyond dispute that, long after chivalry had been sanctioned by religion and law, and had become an institution of all the western part of Christendom, the grossest acts of oppression and the grossest breaches of faith were perpetrated by men who belonged to the very flower of knighthood. Richard I., king of England, was a "true knight." That is his place in history. The English historian of chivalry says that in him "the whole knightly character appeared in all its natural dignity and splendor," and that "his mind was framed in the finest spirit of chivalric liberality." His name is the most striking that appears in the history of the crusades, which were chivalric enterprises. Yet Richard was eminently a bad man—a bad son, a bad king, and a bad associate; false, fickle, cruel, violent, and rapacious. His massacre of the garrison of Acre shocked even the spirit of the 12th century. Another royal knight, and a man in all respects the superior of Richard, was Edward I. He was educated in all the chivalric exercises. He was a diligent reader of the romances of chivalry. He was a crusader at a time when the crusading spirit was nearly extinct. He distinguished himself in tournaments. But this knight was one of the most ferocious monarchs that ever abused power. His unjust conquest of Wales, the trick by which he passed his eldest son upon the Welsh as their prince, his attacks on the independence of Scotland, and the cruelty with which he treated the patriots Llewellyn and Wallace, and which not even death could end, were all contrary to the ideas of chivalry. Toward woman he could behave with intolerable cruelty. He treated the wife of Bruce and other Scotch ladies as prisoners, having first torn them from sanctuary; and the countess of Buchan he had shut up in a cage at Berwick, because she had crowned Bruce. His last vow, one equally solemn and fantastical, and much affected by knights, was by God and the swans, and the purport was the punishment of Scotland for daring to assert her nationality; and had his vow been fulfilled, the consequences to the world would have been incalculably evil, involving no less than the labors of Scotland in literature and science. These facts, which might be multiplied a thousand fold, show that knightly obligations had no weight with knights when fidelity to them would have made against their apparent interests; and the sense of honor of knights of lesser rank than kings was not likely be more keen than that of their superiors.—[illegible] causes operated to favor the growth of [illegible]y after it had been instituted. The first of [illegible] was the action of the church. The clergy [illegible] the principal humanizing agents of those [illegible], and they must have witnessed the at[illegible]s of the first chevaliers in the cause of [illegible] order with lively satisfaction, while [illegible]ding better than the chevaliers them[illegible] probable ultimate consequences. [illegible]etween the church and chivalry was [illegible]ed, as in theory they had the same purpose. The date of this union is unknown, and historians allow 2 centuries for their surmises on the subject. In Saxon England, just before the conquest, the ceremonies of knightly inauguration were of a religious character, and it is supposed they were the same over the continent of Europe, except in Normandy, the Normans looking with contempt on the religious ceremonial, though they changed their views in this respect after they became masters of England. Hallam, one of the most learned and judicious of writers, expresses the opinion that in the times previous to the crusades there was no particular connection between chivalry and religion, and that the religious modes of English investiture were the consequence of the extreme devotion of the English. Be this as it may, the council of Clermont, which authorized the first crusade (A. D. 1095), formally recognized chivalry by declaring "that every person of noble birth, on attaining 12 years of age, should take a solemn oath before the bishop of his diocese to defend to the uttermost the oppressed, the widows, and orphans; that women of noble birth, both married and single, should enjoy his special care; and that nothing should be wanting in him to render travelling safe, and to destroy the evils of tyranny." In this decree we observe that all the humanities of chivalry were sanctioned by legal and ecclesiastical power; and that it was intended they should be spread over the whole face of Christendom, in order to check the "barbarism and ferocity of the times." The comprehensiveness of this decree implies, not only that chivalry had then for some time existed as an institution, but that the church was aware of its power, and sympathized with and aided its purposes. The rulers of the church were the ablest men of the age, and they were too sagacious to suppose that a mere decree could operate to change the nature and conduct of great masses of rude men. Rome, as a general rule, has always preferred to operate with means ready made to her hand rather than to construct new machinery, and chivalry was admirably adapted to the object she had in view. Statesmen as well as priests, the clergy could not fail to see that if the Mussulmans were not assailed in the East they would assail Christianity in the West. Europe was to be precipitated upon Asia, in order to prevent Asia from precipitating itself upon Europe. Essentially religious in their apparent character, the crusades were in reality a great political movement. But to enable Christianity to attack Islamism with effect, it was necessary that there should be an abatement of the quarrels that existed throughout the West. Hence the clear approval of chivalry at Clermont, which was but an extension of the so-called truce of God, and a development of the long pursued policy of the church in discountenancing private war and other forms of violence. All that the lawless portion of men were asked to do was, to conform to the example of the best disposed classes of their countries. The church forced upon them no lofty ideal, but asked of them to imitate the conduct of men whom they knew, and whose course of life they must have respected. The crusades, therefore, did not originate the connection between religion and chivalry, but only caused to be recognized formally a connection that necessarily existed from the state of things, and developed more rapidly than otherwise could have happened the religious element of chivalry. They had, too, a vast influence on its character in other ways. The knights were brought face to face with foes more polished and accomplished than themselves, and their equals in valor and military skill. The elegancies and luxuries of oriental life far surpassed those of the Occident. Saladin was a more refined and intellectual character than any one of the Christian leaders whom he encountered in diplomacy and in arms. The Greeks of the Lower Empire, too, became well known to the crusaders, who, while despising their effeminacy, were compelled to admit and to admire their mental superiority. The effect was to relieve chivalry of some of its harsher features, and to elevate its followers. They became more liberal in their opinions, and some of them, particularly members of the great military fraternities, were suspected of looking with contempt upon all forms of religion. The orientals respected knighthood, and Saladin is said to have received it at the hand of a Christian prisoner, Hugh of Tabaria. Scott has, with his usual felicity, availed himself of these circumstances, and the pictures which he has drawn of chivalric and crusading manners, in "Ivanhoe" and "The Talisman," are not greatly overcharged. The scorn and contempt with which he makes Bois-Guilbert, who in his youth had been a knight errant, speak of religion, probably represents the real opinions of not a few templars. The courtesy that he causes to mark the intercourse between Saladin and Richard was not beyond the character of the former, but it may be doubted if Richard was capable of it.—The school of chivalry exercised a great influence on Europe. The training of youth was very elaborate, and singularly successful. It was commenced at an early period of life, generally at 7 or 8 years of age. For 7 years the duties of the boy—who was called valet, or damoiseau, oftener than page, the latter term not coming into general use until the latter part of the 15th century—were mostly personal. He attended

the lord and lady in whose castle he was taught, at home and at the chase; and he followed the lord to the field, where it was considered unchivalric to harm the valet. The most rigid obedience was exacted, in accordance with immemorial usage. His military training was severe and exhaustive, so that he became a soldier from his earliest youth, and the habits of life were formed when both mind and body are in their most plastic state. The youth was taught to ride, to swim, to make use of the military step, to climb, to leap, and all similar exercises; so that the accounts we have of the physical exploits of the knights are by no means strange, when we consider that they had been so long and so systematically trained in a manner calculated to develop all the powers of the human frame. They were also instructed in the use of the bow, the sword, the lance, and the battle-axe. The carrying of heavy weights, and cudgel-playing, were not omitted from this course of instruction. The knowledge of hunting and hawking was acquired. The only weapon the page was permitted to wear was a short dagger. The training of the youth in religion and love was intrusted to the ladies of the family, and it was as diligently attended to as the harsher branches of the course. Even at so early an age, he was thought to be disloyal to the ladies if he had no sovereign mistress of his affections. The demeanor of the page was regarded, and he was taught to bear himself with grace, promptness, and dexterity to his lord and his guests, to study their wants, to listen to their words, and to obey their orders. Sometimes this training was pursued in regular schools, but usually it took place in the castles of the nobles. A knight who was noble, renowned, and wealthy, was sure to have his abode full of the flower of the youth belonging to the families of his acquaintance; nor could he refuse to take charge of them. The best of the knights preferred intrusting their children to some friend, to attempting their education themselves, justly fearing their own weakness, the indulgence of which would have been an infraction of the requirements of chivalry. The pupils were frequently children of the poorer gentry, who were considered and treated as the equals of their highest born associates, among whom were occasionally to be found persons of blood royal. At the age of 14 or thereabout, the page was advanced a step, and became a squire. This was marked by his receiving the military belt and sword at the altar, to which he was led by his parents. The ceremonies were of a religious character. The priest taking the sword from the altar, it was buckled on while he prayed, and exhorted to its proper use. Sometimes these observances were followed by feasts and rejoicings. This ceremony has often been confounded with the dubbing of a knight, from which in ordinary cases it entirely differed, though the two ceremonies were not unfrequently united, especially in the case of princes. The squire's training, as became his increased years, was far more severe
the valet. The weights he carried
ier. He was made to run great di
endure fatigue of all kinds, to spring
when in full career without the aid of
rup, and to leap on the shoulders of a
man with no other aid than a grasp of
Many other exercises were practised,
amusements were chess, and some g
chance, and dancing. He ran at the q
and led attacks on mimic fortresses.
were several ranks of squire, the high
the squire of honor; and all performe
duties to their lords, some of which ca
reckoned as menial. They led their ho
ried their helmets, shields, and lan
tended on them generally. They to
tive part in combat, and the great
Bouvines, which saved the French
was mainly won by their valor. A line
was always formed behind the line of
The squire waved the knight's pennon,
banner of the banneret and baron w
by him. He was instructed in the
lantry, including versification, and
minstrels who sang of love and war.
of musical instruments was taught him.
ally at the age of 21 the squire was
knight. As the time approached, his
exercises were enforced rigidly, and he
confessed, and fasted. He had spon
was considered a new man. From a
pical of purity, he passed to a bed,
his future heavenly rest. After he
naked, he was clothed in a white
robe, and a close-fitting black coat, t
respectively of purity, of the blood
bound to shed for religion, and of
that awaits all. He then fasted 24 h
in the evening entered a church and
vigil of arms, praying, and sometimes
panied by a priest and his sponsors.
morning he confessed, partook of the
nion, was present at the mass of t
Ghost, and listened to a discourse on
duties, and on the new life on which
entering. He then advanced to the a
sword of the knight suspended from
which the priest detached, blessed,
ed. The youth then went to the lo
to make him knight, and knelt before h
clasped hands (an attitude copied fr
manners, and the only circumstance of
in the whole ceremony), and the lo
"With what design do you desire to
the order? If it is in order to become
pose yourself, and to be honored witho
honor to chivalry, you are unworthy o
would be to the order of chivalry you
receive what the simoniacal priest is
prelacy." When the candidate had
proper answer, his request was grante
upon the knights present, sometimes
by ladies, proceeded to arm him, co
by buckling on his spurs, and endi
ing on his sword. He was then a

ached him, and gave him the *accolade*,
ith the flat of his sword on the shoul-
nape of the neck, and sometimes a
the palm of the hand on the cheek,
n the name of God, of St. Michael,
George, I dub thee knight; be brave,
oyal!" The helmet was then placed
d of the new knight, and his horse
him, on to the back of which he
proceeded to ride about, and to
sword and lance. The entire cere-
gious in its character, and shows
s the connection between the
chivalry. The ecclesiastical influ-
e appears in it, and the clergy
part in the external, material
knight. The religious influence
clearly seen when the moral char-
hivalry is examined. Guizot has
of oaths taken by the knights,
nto 26 articles, showing what
tly obligations. They do not
time, but to different states of
extend from the 11th to the 14th
cover almost the entire sum of
show that chivalry aimed at
objects which religion in all
men to seek. This moral de-
ch superior to the general tone
was unquestionably due to the
quently fell much short of what
as did the knights who re-
ruction. Among the acts of
the shaving of the head of the
knighthood, to cause it to resemble
al tonsure, parting with the hair
upon by the church as a symbol
o heaven. The knight was assim-
ly as possible to the priest, and
known as the holy order. The
ibed were those used on set
or less solemn or festive; but
frequently made under circum-
lered their observance impossi-
of battle, or after a victory.
ys the case that the knights thus
of regular chivalric training, but
who had distinguished themselves
This was one of the causes of the de-
knightly character, as it led men to
l to a condition in life to the proper
e of which their means were in-
which necessitated acts of plunder
tion. Nobility did not necessarily
alry, but chivalry, as a general
ed nobility, and knighthood was
convert even a *villein* into a
. The bastard was as highly regard-
man born of legitimate wedlock.
of the father of an aspirant to
was of far more account than that
ther; and it was an infraction of
on law of chivalry to knight a man
le birth on the paternal side, and
such a knight could have his spurs
n a dunghill, a right that was rarely
enforced. The degrees of chivalry were 3: knight-banneret, knight, and esquire. Before a man could become a knight-banneret, he had to serve as an esquire and a knight, to attain to renown in arms, and to have a considerable military following. This was in strictness, but the law was not always regarded. The knight who aspired to the higher distinction could carry his emblazoned pennon to the leader of the army in which he served, and demand leave to raise his banner; and when his qualifications were proved, the leader cut off the end of the pennon, which thus became a square banner. This simple ceremony was completed with a short address on the banneret's duties, pronounced by the leader or by a herald. The knight-banneret had no superior but the king, and he was the equal of the feudal baron. The knight belonged to the second class in chivalry, and that class was the most numerous. Knights were at first called bas-chevaliers, or bachelors (Hallam denies this), until the latter word had lost its original meaning, *cavalleros*, and *pauvres hommes*. No property qualification was necessary for knighthood, but the position required property for its support. Noble birth was required, but there were instances of its being conferred on men of the humblest origin. Edward III. knighted John Hawkwood, a London tailor, who was one of the most renowned soldiers of that warlike age. The third class of the order was composed of esquires, who should not be confounded with the squires of the body to knights. They were soldiers, occupying an intermediate place between the knights and the men-at-arms. They could claim knighthood, and had been trained for it, but preferred the lesser chivalric rank, in accordance with the sensible maxim, that it was better to be a good esquire than a poor knight. The expense of knighthood prevented many esquires from seeking it. If the esquire were a man of landed property, he could lead his vassals under his pennoncele; and he could reach military command as well as the knight. Such were the 3 classes of the order of chivalry, and they embraced nearly all the members of the dominant races in the various countries of Christendom. Chivalry bound the aristocracy together, and caused the knights and esquires of even hostile and warring nations to sympathize with each other as against the people of their own countries. The men who had contended against one another to-day, might to-morrow unite to cut the throats of a squalid peasantry, driven to insurrection by the worst oppression at the hands of noble knights. A striking instance of this sympathy, and of its consequences, occurred in the 14th century. France had been reduced to a deplorable condition by the unjust wars of Edward III., and the peasantry, after undergoing every species of tyranny from their chivalrous countrymen, rose in that rebellion which is known as *La Jacquerie*, perpetrating deeds as bad as those which had goaded themselves to madness. A number of noble ladies, in-

cluding the duchesses of Orleans and Normandy, were besieged by the peasants in the market place of Meaux, and expected to fall into their hands; but there arrived a number of French and English knights, headed by the comte de Foix and the captal de Buch, eminent leaders on the opposite sides of the kingly and national quarrel, who attacked the peasants, and slew 7,000 of them, afterward burning the town. The English knights sympathized with the French knights, who were their enemies, and not with their victims. Froissart, who is eminently the historian of chivalry, has a strong affection for the knights on both sides of the contest between the Plantagenets and the Valois, but for the people he has not much more regard than he has for their cattle. Contempt for the many was the paramount sentiment of the chivalric order, and it is not probable that the knights supposed they could be guilty of injustice to the lower classes. They felt toward them as the elder Cato felt toward all who were not Romans. Local circumstances probably modified this feeling. It was not possible for English knights to look with utter contempt upon those yeomen from among whom came the real victors of Crécy and Poitiers and Agincourt. In France there was no class that answered to the English yeomen, and chivalric contempt for the people was there unbounded. France was eminently the land of chivalry, as the history and terms of the order show. German chivalry was not high, and there the spirit of exclusiveness shone forth unrelieved by any of that grace which softened it in France. The peculiar circumstances of the peninsula gave a peculiar character to Spanish chivalry. The general circumstances were the same as in other countries, but there was much that was oriental in the Spanish knight, the consequence of his having Mussulmans for neighbors. There were Mussulman as well as Christian knights. The Moorish women presided, unveiled, at tournaments, and conferred the usual rewards on skill and valor. Chivalry was never of much importance in Italy. The rise of the Italian republics, the development of the commercial spirit, and the introduction of the condottieri, were all circumstances unfavorable to the growth of the order. In northern Italy the chivalric spirit, in its better sense, was little known; but in the south it was more felt, and had considerable effect on daily life. This difference was owing, it may be supposed, to the presence of the Normans there, and to the establishment of the Angevine dynasty at Naples. Knighthood was there more indiscriminately conferred than elsewhere, not being confined to the nobility. But, examine it where we may, we find chivalry ever exclusive, and often tyrannical. Deeds that would disgrace a thief, and acts of cruelty that would have disgusted a Hellenic tyrant or a Roman emperor, were common things with knights of the highest lineage. The same English sovereign who was with difficulty persuaded not to murder the six burgesses of Calais, could behave toward a
knightly antagonist with liberality
its extreme. The Black Prince, w
very mirror of chivalry, showed by
at Limoges that he was capable of an
These contradictions of character and
common in all ages, but they appear
odious when compared with the ideal o
—The whole time of the knights w
in war. Nearly as much glory w
tourney as in the battle-field, and to
were the grand chivalric sports, and
were of a serious character. They
ducted on fixed principles, and w
guished by a spirit of courtesy whic
was allowed to infringe. In the to
ferent parties of knights contended,
uals did so. Newly-made knights w
anxious to contend in the lists, to p
valor. Those who journeyed to th
were allowed to proceed in peace.
a tournament was proclaimed by her
various courts, and all were invited
who would uphold their own rep
maintain the superior beauty of th
At first nobility of four descents wa
before a knight could enter the li
were closed against the esquire; but
ness gave way to the claims of pers
and it was in the true spirit of chival
dividual knights were admitted on
ground than their established cha
bravery, and that esquires shared the
A knight could not tourney anony
were, and his name and character w
to be known, in order that he might b
if he had been guilty of dishonoral
but the rule was not without consi
ceptions, and Ivanhoe broke no
regulation when he entered the l
without a name, and with his visor
the fierceness and animosity with wh
the templar there contended were q
to the spirit and purpose of the t
though there was always a tendenc
occasions to convert the mimic w
hostilities, which not even the
of courtesy only could entirely supp
tournaments were the glory of the l
reigned there supreme. They propo
wards, adjudged the prizes, and deci
putes without appeal. It was not unc
troops of knights to be led to the l
each lady leading a knight by a
or gold. Every thing was so ord
press that deference for the sex w
distinctive excellence of chivalry.
tival which followed the tourney, t
who had most distinguished t
presented by the heralds to the
queen of beauty and love delivered
to the victors, with words expr
ladies' sense of his worth to each,
that he might be happy with the ob
love. "The victory was entirely ow
favor of my mistress, which I wore
met," responded the knight. The t

ucceeded by a ball, at which precedence was
orded agreeably to deeds of arms, and not to
On the second day the esquires of the
ts had the lists, wearing their lords' armor
izances. They were conducted by
lens, who awarded the prizes. The
was devoted to the *mêlée*, in which
knights and esquires participated. The
s were very popular, and were held
possible occasion. They were con-
by the church, ostensibly because of
nsiveness, and that lives were some-
in the rough play; really, and as was
in the 13th century, because they pre-
knights and others from joining the
But this opposition was vain. In
the assertion that every man killed in
was damned, the tournaments were
ith general approbation. No circum-
e forcibly establishes their popularity
could triumph over ecclesiastical
y endured long after the order of
its had ceased to exist. In England
the favorite sports of the nobility and
to the early part of the 17th cen-
ce they ceased 50 years earlier.
ered from the tournament, inas-
and the presence of ladies were
to it, and it could be shared
nissible to the tournament.
was serious joust, and the peaceful
The former was a single combat, and to
judicial fights and duels, with which
nd no connection. National rivalry
ies were the chief occasions for
peaceful joust generally followed
ent, and warlike weapons were
used in them, which enabled the
o show their skill by not injuring their
Some of the most spirited inci-
chivalric times are connected with
passage of arms belonged to the
A knight and his companions proclaimed
ey would hold a particular spot against all
of similar rank, and this frequently led
ontests. Hunting, hawking, listening
chivalry and to the efforts of the
chess, were among the principal
of the knights. Chess was espe-
avored. At entertainments two knights
m the same dish, or a knight and a lady
o. On great occasions peacocks and
were the favorite food of knights,
by these birds that many of their
vows were made, with which God,
Virgin, and the ladies were associated.
brotherhood-in-arms is of much older date than chivalry, but was adopted by the order.—The education of women in the chivalric times corresponded to that of men. The maiden waited on her mistress as the youth on his master. She was taught to sing, to dress simply, to bear herself becomingly, and to be courteous to all. She and her companions discharged all the duties of the household. They had some knowledge of medicine, and were skilled to heal the wounds that had been inflicted in their behalf. The dominion of woman was almost unbounded; and the knight who had no mistress was regarded as a tree without fruit or leaves, or a body without a soul. He was not expected to achieve any thing if he were not a lover. Unquestionably there is much exaggeration in what is said of the position of woman in the age of chivalry, but still it was a high one, and the effect was good then, and has been productive of good until now, the lofty consideration in which the sex is held in all civilized countries being one of the consequences of chivalry.—The decline of chivalry may be said to have commenced as soon as it became evident that gunpowder was to work a change in the modes of war. The institution was never more brilliant than in that century when gunpowder was first used in the West, the 14th, the age of Edward III., of the Black Prince, of Chandos, Manny, Audley, Du Guesclin, Clisson, Hotspur Percy, and many other brilliant knights, whose exploits are embalmed in the pages of Froissart, the most chivalresque of all historians. That century constituted the noon of chivalry, and its historian's life synchronizes with that brilliant period (1337–1410). Yet we have but to cast the mind's eye to the time of the last great Plantagenet war of England with France, to find an entirely different state of things. Edward III.'s wars were chivalric, those of Henry V. and Henry VI. were not. It is common to ascribe the end of French chivalry to the establishment of a regular military force by Charles VII., which was the beginning of the army of France, and was a measure subversive of feudalism, and in opposition to the ideas and customs of chivalry. The victories of the Swiss over the Burgundians were injurious to what there was left of chivalry; and there never was a more unchivalric monarch than Louis XI. Bayard, who belonged equally to the 15th and 16th centuries, was the last of the great knights, and came into the world 4 generations too late. Lord Herbert of Cherbury was sufficiently fantastical for a knight, and his adventures remind the reader of the incidents of chivalric romances. Captain John Smith, who may be said to have founded the United States, had knightly qualities, and his adventures were strange as any that ever befell an errant knight. But chivalry itself was at an end at the opening of the 15th century, as an institution. The good that was in it has survived, and the obligations of the world to it, as a meliorating and civilizing agent, are large, and should never be called in question.—The subject of chivalry is illustrated by nearly all the mediæval literature, by the songs of the troubadours, the lays of the minnesingers, the numberless romances and romantic histories, and the poems of Ariosto, Tasso, and Spenser. The most important of modern works which treat particularly of it are the *Mémoires sur l'ancienne chevalerie*, by De la Curne de St. Palaye (Paris, 1759–'80); *Collection historique des ordres de chevalerie*, by Perrot (1836);

Dictionnaire historique des ordres de chevalerie, by Gourdon de Genouillac (1853); *Ritterzeit und Ritterwesen*, by Büsching (Leipsic, 1823); *Ritterwesen und die Templer, Johanniter, etc.*, by Weber (Stuttgart, 1822–'24); especially the very complete *Geschichte des Ritterwesens*, by Reibisch (Stuttgart, 1842); and the "History of Chivalry," by Mills (London, 1825), and by James (London, 1830).

CHIVASSO, or CHIVAS (anc. *Clavasium*), a Sardinian city, situated in a fertile plain on the left bank of the Po, on the railway from Turin to Ticino, in the province, and 14 m. N. E. of the city of Turin; pop. 7,000. It has a church dating from 1425, 5 convents, and the ruins of an ancient castle or palace of the counts of Montferrat. Its trade is chiefly in grain and cattle. For a long period it was regarded as the key of Piedmont, and was well fortified, but its defences were destroyed by the French in 1804. In the neighborhood, on the other side of the Po, are the remains of the ancient city of Industria, discovered in 1745.

CHLADNI, ERNST FLORENS FRIEDRICH, an eminent German physicist, of Hungarian extraction, born at Wittenberg, Nov. 30, 1756, died in Breslau, April 4, 1827. Educated for the profession of law, he early left its practice and gave himself to the then neglected science of acoustics. He was especially successful in experimenting upon the velocity of sound in various bodies, gaseous and solid; and even more successful in experiments and calculations on the movements of plates of glass when in acoustic vibration. He also distinguished himself by being the first scientific man who defended the popular opinion of the fall of solid bodies from the sky. Chladni was the inventor of the musical instruments called the euphon and the clavicylinder. His principal works are *Entdeckungen über die Theorie des Klanges* (Leipsic, 1787), and *Akustik* (Leipsic, 1802; 2d edition, 1830; French edition, *Traité d'acoustique*, Paris, 1809).

CHLAMYS (Gr. χλαμυς, a scarf), an outer garment of the ancient Greek costume, and of the oriental races. It somewhat resembled the *paludamentum* of the Romans, and in the reigns of some of the later emperors was adopted by them. It was a woollen garment, and differed from the blanket, *ἱματιον*, which was the usual dress of the male sex among the Hellenic races, in being much smaller, of a finer material, often variegated in brilliant colors, and otherwise richly ornamented. It was also, in its usual form, oblong instead of square, being twice as long as it was wide; but it was sometimes increased in volume by the addition of 2 gores, or wings, in the shape of obtuse-angled triangles, sewn on to the long sides with the apices upward. With this improvement it was known as the Macedonian or Thessalian chlamys. The usual mode of wearing the chlamys was to fasten the corners of the shortest side by means of a clasp (*fibula*, *περονη*) on the middle of the chest, when the garment fell down over the back to the knees, or on the right shoulder, when it hung over the left arm and side, much after the fashion of the short cloak of the Elizabethan costume in England, commonly, though improperly, supposed to be of Spanish origin. In the latter mode, it was often worn over armor as an ornament or insignia of dignity, especially by generals and officers of superior rank. There is a fine representation of a mounted warrior, in complete panoply, charging with the lance, having his chlamys flying behind him and secured with a clasp over the right breast, in the manner described above, yet to be seen in the great mosaic at Pompeii. The same garment is also represented in many figures on Trajan's column. The chlamys worn by boys was ordinarily yellow, the military chlamys scarlet; and it was remarked afterward as of evil omen, that on the fatal day of Carrhæ, Crassus wore a dark-colored chlamys or paludamentum. The chlamys of women had often a rich fringe or border, and was many-colored and richly embroidered. Such was that worn by Milonia Cæsonia, the wife of Caligula, when she received the prætorian guards in a helmet and golden chlamys. It was not unusual to twist the chlamys about the arm, so as to serve as a shield; as was done by Alcibiades, when he died fighting against his murderers.

CHLAPOWSKI, DEZYDERYUSZ, a Polish general, born in 1788, in the duchy of Posen. His family occupied a distinguished rank among the nobility of that province, which after the division of Poland became a part of the kingdom of Prussia. When, after the peace of Tilsit, 1807, a part of Poland was made independent by Napoleon, as the duchy of Warsaw, Chlapowski entered the ranks of its newly created army. He subsequently fought bravely for the emperor in Spain, in Germany, where he distinguished himself at Ratisbon, Znaym, and Wagram, and in the great Russian campaign of 1812. The favor of Napoleon, promotion to the rank of lieutenant-colonel, and the command of a squadron of guards, were his reward. In 1813 he left the army of the emperor, and retired to his estate in Posen, where he engaged in agricultural pursuits. Through his wife, a Grudzinska, he became the brother-in-law of the grand duke Constantine, brother of the emperor Alexander, and governor of Poland. Notwithstanding this connection with the imperial family, he hastened to Warsaw at the outbreak of Nov. 29, 1830, to offer his services to the Polish revolution. He received the command of a regiment, then that of a brigade, distinguished himself at Grochow, and afterward commanded a division on the left wing of the army. From the beginning of the war it had been an object of the highest importance to revolutionize the province of Lithuania, but a wavering and too cautious policy had delayed its execution. After many disasters, Chlapowski finally succeeded in getting a command of a few hundred horse, and 2 guns, to attempt an expedition in the

army. It commenced glo-
the leader and the bravery
equally admirable; several
Russians were surprised and
arms captured. Lithuanian
d from every side to join their
cely had Chlapowski joined
t there for the same pur-
k superseded him, when
to go backward; an at-
failed; the Russians were
y, distrust, and dissension con-
on. Repulsed from Szawle, the
in separate detachments. Of
ders, Dembinski saved his
ed at Warsaw as a hero;
the death of a traitor from the
f his followers; Chlapowski, with
f his command, reached the Prus-
followed by the Cossacks, and
himself to the Prussians. After a
he went to Berlin to justify himself
rt of Prussia as its ancient sub-
, and was allowed to return to his
fterward published *Lettres sur*
militaires en Pologne et en Li-
1). His brother Stanislas
an expedition.

F, a Polish general, and
ommencement of the revolution
n March, 1772, died Sept. 30,
wice. At an early age he en-
service, and distinguished
war for independence un-
who, on the battle-field of Rac-
braced him before the troops.
aign he acquired that calmness
which he was subsequently char-
fter the fall of Praga (Nov. 9,
surrender of Warsaw to the Rus-
Suwaroff, he retired, went to
enlisted for the service of the
lic, in the first of the Polish le-
command of Gen. Dombrow-
nd fought in the following years at
re he was made lieutenant-colonel
ld, in the defence of a mountain
at Pontremole, Croce, Busano,
nd Ponti. When in 1806 Dombrow-
called the Polish nation to arms,
ction of Napoleon, and promis-
of Kosciuszko, Chlopicki returned
and fought with distinction in
f Eylau and Friedland (1807),
ussian campaign, and from 1808
ain. His valor shone particularly
nate siege and the conquest of
the protracted war in Aragon,
Valencia, where he defeated
and others. The great cam-
Russia in 1812 promised the res-
land, and he gained new distinc-
battles of Smolensk and on the
he was wounded. He then fol-
ating French army, but not
the promotion to which he considered himself entitled, he resigned, and was living in retirement when the armies of the coalition entered Paris in 1814. On the invitation of Alexander of Russia, who assumed the title of king of Poland, and gave the new kingdom a constitution and a national government, he entered the ranks of the new Polish army as general of division; but the wild and capricious temper of its chief commander, the grand duke Constantine, soon caused him to retire. He next spent a series of years in peaceful occupations, while the mismanagement of public affairs, the violations of the constitution, and secret societies, ill checked by the rigor and secret police of Constantine, gradually prepared a revolution. After the night of Nov. 29, 1830, which expelled Constantine from Warsaw, Chlopicki was called upon by the general voice to put himself at the head of the nation; but having no faith in the insurrection, he hesitatingly joined the provisional council of administration, and could hardly be persuaded to take the dictatorship, which he assumed, however (Dec. 5), on the Field of Mars, but with the declaration that he would resign his dignity to the national diet immediately after the meeting of that body. But the diet confirmed him in his office (Dec. 20) as Naczelnik, one voice only opposing. He maintained order and discipline, but his cautious, temporizing movements, his hardly concealed fear of failure, his strict observance of the narrow limits of the kingdom, as created by the treaty of Vienna in 1815, and his negotiations with the emperor, inspired by the minister Lubecki, and aiming at the restoration of the constitution under Russia, proved to the patriots, who wanted revolutionary measures, the insurrection of all the provinces of ancient Poland, and an immediate march on Lithuania, that the revolution had fallen into error in the choice of its leader. While the clubs resounded with accusations of the dictator, the emperor Nicholas demanded unqualified and immediate submission, and his armies passed the Bug, and entered Poland. On Jan. 23, 1831, Chlopicki laid down his office and his military command, and proved his patriotism after the declaration of independence, Jan. 25, in the battles of Wawre and Grochow (Feb. 19 and 25), as a common soldier and adviser of the new commander-in-chief, Prince Radziwill. In the second battle of Grochow he led a regiment against the grove of alders occupied by the Russians; 3 horses had already been shot under him, yet he was still advancing, when a double wound compelled him to retire, and checked the Polish advance. To restore his health he went to Cracow, where he remained after the fall of Poland, under the *surveillance* of the government, being but seldom allowed to leave the place.

CHLORATES, combinations of chloric acid with bases. The only one of these salts of importance in the arts is CHLORATE OF POTASH. The composition of this is expressed by the formula KO, ClO_5, 1 atom of oxide of potassium combined with 1 of chloric acid, which is itself composed of 1 atom of chlorine and 5 of oxygen. It is a white anhydrous salt, in tabular crystals, soluble in 20 parts of cold, or 2½ of boiling water. It is much employed for affording pure oxygen gas, and also as an oxidizing agent in chemical laboratories. At a dull red heat it is converted into chloride of potassium, giving out 39.15 per cent. of its weight of oxygen. From the readiness with which it explodes when mixed with sulphur, carbon, &c., it is used for matches and for preparing a fulminating powder for percussion caps. As, however, in the latter use, the chlorine and the salts of potassium produced tend to injure the iron firearms, an improved percussion cap has been substituted, prepared with the fulminate of mercury. Its presence in matches is indicated by their explosive sound when ignited. Chlorate of potash is obtained by passing chlorine through a solution of caustic potash or carbonate of potash; on evaporating the liquor, the chlorate of potash crystallizes at the bottom. As the quantity of this salt obtained is hardly $\frac{1}{16}$ of the carbonate employed, Liebig has devised a better method of preparing it by oxidizing the chloride of potassium.

CHLORIMETRY, or CHLOROMETRY (chlorine and *μετρον*, measure), processes introduced by the French for estimating the strength of chlorine compounds, in order to test their bleaching power. Gay-Lussac's original method consisted in finding the quantity of the gaseous solution or of the solution of the chlorine required to decolor a given quantity of a standard solution of sulphate of indigo. The defect of this process was the difficulty of obtaining and keeping a uniform standard of the test. Gay-Lussac subsequently made use of a solution of arsenious acid in hydrochloric acid colored with a few drops of sulphate of indigo. Chlorine solution added to this destroys the indigo color, when the arsenious acid is first completely converted into arsenic acid, and from the quantity required to effect this upon a given amount of arsenious acid, the strength of the chlorine compound is calculated. Dr. Ure's process is founded upon the decomposition of ammonia by chlorine, and the amount of nitrogen evolved. Dr. Dalton's process is based upon the conversion of protoxide of iron in solution into sesquioxide, the chlorine decomposing the water, and its oxygen going to the salt of iron.

CHLORINE (Gr. χλωρος, green), a simple gas of yellowish green color, discovered by Scheele in 1774, and first pronounced a simple body by Gay-Lussac and Thénard in 1809—a conclusion afterward confirmed by Sir Humphry Davy, who gave it the name it bears. Compared with the air its weight is 2.47. Its equivalent number is 35.40. It forms a yellow-colored fluid under the pressure of 4 atmospheres. Its smell is strong and peculiar. When inhaled, it instantly produces great irritation in the trachea, accompanied with a suffocating cough, which may continue for hours. For this, ether affords the best relief. Water at 60° absorbs about twice its volume of the gas, and the solution possesses its color and odor; exposed to the light, it is soon converted into hydrochloric acid. Boiling water takes up little or none of the gas. The moistened gas congeals into yellow crystals at 32°, which consist of 10 atoms of water and 1 atom of chlorine. The gas has a great affinity for hydrogen, uniting with it with explosion, and forming hydrochloric acid, when flame or the electric spark is applied to their mixture, or the solar rays are directed upon it. Burning bodies immersed in chlorine continue in ignition. Phosphorus takes fire spontaneously in it; sulphur and antimony also combine with it with ignition. The binary combinations of chlorine are called chlorides, and many of them are salts of great importance in the arts. (See BLEACHING POWDERS for chloride of lime, and SALT for chloride of sodium.) With oxygen it forms 4 acids, viz.: the hypochlorous, chlorous, chloric, and perchloric. The salts formed by the chloric acid are called chlorates, and of these the chlorate of potash is the most interesting. Chlorine decomposes coloring matters, depriving them of the hydrogen they contain, but water must be present. Its affinity for this element is so great, that paper dipped in oil of turpentine is instantly inflamed when immersed in an atmosphere of chlorine; the oil burns and much carbon is deposited. Its affinity for many of the metals is also remarkable. Several of these when thrown in powder into the gas ignite spontaneously and burn brilliantly. No other substance has such powerful bleaching properties. It is also a most efficient agent in decomposing putrid and noxious vapors, as those which collect in hospitals, dissecting rooms, &c.; the deleterious sulphuretted hydrogen is converted into sulphur and hydrochloric acid. Its use as a disinfectant, however, requires caution in consequence of its own injurious properties when in great excess. In the form of chloride of lime, moistened with water, and exposed in shallow vessels, it may be safely employed. The great natural repository of chlorine is common salt, chloride of sodium, which contains of it about 60 per cent. The salt is decomposed by mixing it with oxide of manganese, and adding sulphuric acid. The sodium is converted into an oxide, and this, with the oxide of manganese, combines with the sulphuric acid, forming sulphates; water is also produced, and chlorine is evolved. Hydrochloric acid, composed of hydrogen and chlorine, may also be used for the same purpose, the oxide of manganese alone decomposing it, with the formation of chloride of manganese, water, and chlorine. The aqueous solution of chlorine is used in medicine as a stimulant and antiseptic. By some it is highly recommended as a gargle in scarlatina, putrid sore throat, and small pox. The chlorine may be conveniently administered in its combination with lime or soda.

CHLORIS, the goddess of flowers, wife of

, the same as the Latin Flora.—Also the en to Melibœa, the daughter of Niobe, nt of her pallid countenance, when ricken at the destruction of her and sisters.—Another Chloris was the f Nestor.

ROFORM, a fluid discovered in 1831 amuel Guthrie of Sackett's Harbor, r distilling a mixture of alcohol and of lime, and subsequently rectifying ct. About the same time Souberain , and Liebig in Germany, obtained ts true composition was not under- til 1834, when Dumas and Peligot ly investigated its character. It is re- by the formula C_2HCl_3, which may be as a perchloride of the hypothetical yl, as formic acid, C_2HO_3, is its oxide. has reference to its composition. It r. limpid fluid, without color, of an ereal odor, and very sweet taste. cific gravity is 1.48. It is very t inflammable. Its boiling point density of its vapor is a little 4 times that of air. It mixes with ringly, sinking in distinct drops well shaken imparting to the pecu odor and taste. When any present in the chloroform, the drops r assume a milky appearance. Chlo- es with alcohol in all proportions. A processes for obtaining it are known but it is prepared on a large scale xture of alcohol, water, and chlo- , the proportions vary with different For 10 lbs. of chloride of lime from 3½ ons of water are used, and of alcohol to 32 fluid ounces. The fluid which separates into 2 layers, the lower ich is an impure yellow-colored chloro- purify it, it is separated by decanting pper layer of water and alcohol, and th water, and mixed with a weak so- rbonate of soda. It is then agitated red chloride of calcium, which ab- water, and distilled off from this by a water bath, the process being stop- ⅓ has passed over. Strong sulphuric metimes slowly added to wash the im- roform, and is separated by the subse- roduction of milk of lime and distilla- it if the sulphuric acid contain any cid, the chloroform is liable to decom- rapidly, and become so charged with as to be unfit for use. The sulphuric ess is not therefore generally approved the sulphuric acid is taken up by e of barytes of equal weight with it, addition of which the mixture is it is afterward distilled from quick- ing stood mixed with it for a day or loroform may be contaminated with ed pyrogenous oils, the presence of detected by evaporating a little of the the hand; if any oil is present, it re- hind. The effect of the oil is to cause distressing sickness and headache when the chloroform is inhaled. Alcohol and ether may both also be found in some qualities of chloroform. From the first discovery of this substance, it was applied as a medicine in a variety of diseases by practitioners in this country and Europe; its action, when taken internally, being that of a sedative, narcotic, and antispasmodic. It has also been used as an external application for relieving pain, destroying fetor, and promoting the separation of diseased parts. The first instance of its having been used by inhalation is described in vol. xxi. of "Silliman's Journal," Prof. Ives of New Haven having thus administered it in January, 1832, to relieve debility and difficult respiration in a case of pulmonic disease. In the hospital of Frankfort and other places it is now used with decidedly good effects in frequently repeated small inhalations for the relief of the cough, pain, and fever in inflammation of the lungs. In March, 1847, M. Flourens tried the effects of its inhalation upon the lower animals; and in November of the same year, Dr. Simpson of Edinburgh, seeking a substitute for ether, tried this, at the suggestion of Mr. Waldie, and soon introduced it as a new anæsthetic agent in surgery and medical practice, recommending it for its more active qualities than those of ether, its greater cheapness, and pleasanter effects. It has since come into very general use, and by many practitioners is preferred to ether, many thousands of cases being cited of its employment in different hospitals without ill effects following its inhalation. Others, however, refer to well authenticated instances of death following its use; and Dr. Warren of Boston, in 1849, alluding to these, declares he should, if compelled to substitute chloroform for ether, do so with much anxiety. It should under no circumstances be administered to persons liable to epileptic attacks, congestion of the brain, or disease of the heart, nor in general immediately after meals. The remedies for an overdose are similar to those employed for restoring drowning persons to consciousness. The electro-galvanic battery was first successfully applied for this purpose by H. G. Luther, a dentist, then of Boston, as reported in the Boston "Medical and Surgical Journal," Jan. 30, 1850.—The solvent powers of chloroform, connected with its want of inflammability, make it preferable to ether for the preparation of many compounds, which, when made with the latter, sometimes involve serious accidents. It dissolves a large amount of camphor, and is preferred by many to alcohol for this purpose. It has recently been recommended as an antidote in case of poisoning by strychnine, and such a case is reported in Cortland county, N. Y., where life was saved by its inhalation and application along the spine. (See ANÆSTHETICS.)

CHLOROPHYL (Gr. χλωρος, green, and φυλλον, leaf), the substance which gives the green color to leaves and herbage. It may be dissolved from the leaves by alcohol or ether, and is found to consist partly of wax, and partly of a peculiar substance allied to indigo.

CHLOROSIS, or GREEN SICKNESS (Gr. χλωρος, green), a disease affecting specially young girls, characterized by excessive paleness, with a greenish or yellowish tint of the skin, loss of appetite, dyspepsia, weak circulation, palpitations, debility, and menstrual irregularity. Sometimes the nervous symptoms prevail; at others the derangements of the circulation, of digestion, or of menstruation, are most striking; so that the characters of the disease are quite various. The waxy white appearance of the skin, of the lips, lids, and orifices of the mucous membrane, is the most noticeable symptom; the face may be œdematous; the respiration is oppressed and sighing; the appetite may be preserved, but it is generally capricious, with a longing for improper and even indigestible substances, and with more or less nausea, dyspepsia, and constipation; the catamenial discharge may be suppressed, irregular, insufficient, or excessive, accompanied by unnatural pain and by leucorrhœa. The pathological condition of chlorosis is a diminution of the amount of the red globules of the blood, while the fibrine remains the same, so that the clot, though small, is firm and may exhibit the buffy coat; the corpuscles have been found as low as 27 in 1,000, instead of from 110 to 150 as estimated by Andral for healthy blood; bleeding reduces the amount of the corpuscles; from the full proportion of fibrine, hemorrhage is comparatively rare in chlorosis, and inflammation not uncommon. In the retention of the amount of fibrine the blood of the chlorotic differs from that of the scrofulous person; anæmia is a diminution of the whole mass of blood, the opposite of plethora, and may lead to chlorosis or scrofula in lymphatic temperaments. A common symptom of confirmed chlorosis is a *souffle*, or bellows sound, in the heart and large arteries during the first period of the contraction of the ventricles; it is of great importance to be able to distinguish this from the same sound produced by valvular disease of the organ, as the two symptoms, though the same, require diametrically opposite methods of treatment. The chlorotic souffle is never heard except at the time of the first sound of the heart, or when the blood is sent by ventricular contraction into the aorta and pulmonary artery; it is slight, short, and does not mask the first sound; it is heard most distinctly over the aortic orifice, whence it is sometimes propagated to the carotid and subclavian arteries; unlike the organic souffle, it disappears readily under treatment. Every souffle presupposes an excess of friction in the moving blood, either from contraction of the orifices or change in this fluid; chlorosis occurs generally at an early period in life, when organic disease of the heart is rare, so that we must look for the cause of the souffle in the condition of the blood itself. As the friction of a liquid is in the inverse ratio of its density, the chlorotic blood, which is thinner than natural, would occasion an excess of friction and a souffle; but the inconstancy of this symptom in chlorosis requires for its explanation the additional cause of some spasmodic and intermittent contraction of the aortic orifice, effected doubtless through the nervous branches of the sympathetic system, generally deranged in this disease, as are also the cerebro-spinal and spinal systems. Chlorosis of recent origin, and uncomplicated with disease of the heart, lungs, and digestive organs, is not a dangerous affection, if properly treated; its duration of course varies with the nature of the symptoms and the gravity of the complications. It is specially a disease of the female sex, though it may occur in males, in whom it is frequently called "consumption of the blood;" it is more frequent among the daughters of luxury, brought up in the excitement and sedentary life of cities, than among residents in the country who pass much of their time in the open air; but poor workwomen in factories and shops, insufficiently nourished, and overtasked in close apartments, are the favorite victims of this disease. The great principle of treatment is to restore to the blood the normal quantity of red globules, which physiology teaches are the carriers of oxygen to the remotest parts of the system, and specially concerned in preparing the nutrient materials for the nervous and muscular tissues. The most important element in the red globules is iron, which of course must be deficient in chlorosis; and the object of the physician, therefore, is to supply the requisite iron. An immense number of preparations of iron and its salts has been recommended and successfully employed for this purpose. According to eminent chemists, the only form in which iron can enter the blood is that of the protoxide, to which all ferruginous preparations must be reduced in order to be effectual; and the best, and perhaps the only way to render this unstable compound of iron permanent, is to protect it by sugar, as a saccharine protoxide. A flesh diet has also a decided effect in promoting the formation of the red corpuscles. In addition to iron and nourishing diet, residence in an airy, light, and dry locality, exercise in the open air, attention to the ordinary rules of hygiene, and abstinence from excessive mental or mechanical labor, will soon restore the color to the cheeks, the strength to the muscles, and activity to the nerves. Chlorosis is one of the diseases which undeniably prove the truth of the old saying that "the blood is the life."

CHMIELNICKI, BOGDAN, chief of the revolted Cossacks, under the reigns of Ladislas IV. and John Casimir, kings of Poland, born in 1593, died Aug. 25, 1657, was the son of a Polish nobleman, who settled among the Cossacks of the Ukraine. This people, who had long defended the eastern boundaries of Poland against the Tartars and Russians, were at that time subjected to grievous oppression. Their religion was persecuted, their freedom circumscribed; the castle of Kudak, called the curb of the Cossacks, was built to restrain them. Thus exasper-

Kudak and massacred the gar-
subdued. After their de-
Bogdan was sent to the court
re he was favorably received and
of the Zaporogian Cossacks.
suspicion, and hatred soon drove him
finally made him a scourge of Poland.
ues of Czaplicki, an official at Czehryn,
him of an inherited estate, and of his
deserted him and her religion, and
son Timofey to be publicly whipped.
sought for redress at Warsaw, he
of the hatred and prejudices of
entered upon a conspiracy against
and sought the alliance of the khan
rs, who ordered 80,000 of his people
He now revolted, and command-
e of all the Poles, Catholic priests,
the son of the hetman Potocki,
sent against him, was deserted and fell
at the Yellow Waters, and the het-
made prisoner in that of Korsun
three other commanders were igno-
defeated at Pilawce. Chmielnicki
of the Ukraine, and carried ter-
on, and death as far as Lemberg
but stopped there, awaiting the re-
ction of a king, held at Warsaw.
w king, John Casimir, the war
with equal cruelty on both sides.
defeats followed by turns, condi-
e were offered and rejected, treat-
violated, provinces desolated,
committed; the serfs even of
ricts rose to freedom and rapine;
put himself under the protection of
Russia (1654), and again under that
l (1656). A long war between Rus-
oland broke out after his death, which
with the treaty of Andruszow in 1667,
the cession of Kiev, Smolensk, and the
o the czar. The Cossacks, by passing
Polish republic to its enemies, de-
re than any other nation, the fate of
ed country.

, RUFUS, an American advocate and
s born in Essex, a small town in the
the same name in Mass., Oct. 1, 1799.
love of knowledge which distin-
from the first, enabled him to draw
t advantages from the moderate oppor-
ruction and training which were
during boyhood. He entered
in 1815, and was graduated
hes honors of his class in 1819;
during his collegiate course a
which gave confident assurance of
career. He continued attached to
in the capacity of tutor for a year
ion. He then entered the law
idge, and after remaining there
ths, he went to Washington, where
about a year in the office of Mr.
ning to the north, his professional
completed in the office of Mr. An-
rich, and in that of Judge Cummins of Salem. He was admitted to the bar in 1824, and commenced the practice of the law in the town of Danvers, but in the course of 2 or 3 years removed to Salem, the shire town of the county. From the moment of his admission to the bar his success was marked and his rise rapid. The oldest and most experienced jurists at once found a formidable rival in the youthful advocate, who to thorough knowledge of the law, the most careful preparation of each particular case, and the most earnest devotion of himself to the cause of his client, added the charm of a brilliant and persuasive rhetoric, such as had never before graced the conflicts and discussions of a New England court of justice. Though he occupied a seat in the Massachusetts house of representatives for one year, and subsequently in the senate for the same period, he did not allow himself to be diverted from the path of professional toil and professional success by the attractions of politics. When in the year 1832, at the earnest solicitation of his personal and political friends, he allowed himself to be put in nomination as candidate for congress, he felt that he had gained a position which made such a step not imprudent. He was elected to the house of representatives, and served there for a single term, with honor to himself and satisfaction to his constituents, but declined a reëlection, having determined to remove to Boston, the capital of the state, as the sphere best suited to his powers and his aspirations. He went to Boston in 1834, entered at once into possession of a large and important business, and measured his powers with the leaders of the bar. For the next 8 years his life was one of the most assiduous toil and the most brilliant triumphs. In February, 1841, he was chosen by the legislature of Massachusetts a member of the senate of the United States, in place of Mr. Webster, who had entered the cabinet of President Harrison. He remained in the senate till March, 1845, the close of his term, when he gladly returned to the more congenial sphere of the bar. He took frequent part in the discussions of the senate, and made brilliant and elaborate speeches upon the Oregon question, the tariff, the courts of the United States, which were published in a pamphlet form. From the close of his senatorial term to the present time he has resided in Boston, engaged in the most extensive practice, and only diverted from his labors by the occasional preparation and delivery of a public address. He was for 3 or 4 years one of the regents of the Smithsonian institution. April 21, 1841, he delivered a eulogy on President Harrison before the citizens of Boston, in Faneuil hall. In Dec. 1843, he gave the address on the anniversary of the landing of the pilgrims before the New England society of New York. In Aug. 1853, he pronounced a eulogy upon Daniel Webster before the faculty and students of Dartmouth college. In Sept. 1854, he gave an address at Danvers at the dedication of the Peabody insti-

tute. On July 4, 1858, he delivered an oration before the young men's democratic club of Boston. All the above discourses have been printed. To this list of occasional performances are to be added 2 addresses before the students of the Dane law school at Cambridge, and 2 before the mercantile library association of Boston. Some of his political speeches, and one or two at least of his forensic arguments, have appeared in print.—Mr. Choate's style is peculiar and characteristic, very effective in his hands, but hardly to be commended as a model for imitation; it is rich, vivid, and glowing, instinct with passion, and colored with all the hues of fancy, but sometimes, it must be admitted, a little extravagant and exaggerated. The most remarkable quality, however, in his written compositions, is the structure of his periods. These are not the short and compact statements, involving but a single proposition, in which most writers of our times express their thoughts; but they recall and renew the continuous sweep and long-resounding march of the prose writers of the 16th century. They are often of breathless length, containing clause after clause, modifying, enlarging, or limiting the leading idea; full of compact life, and flowing from a mind of the most teeming luxuriance. Some of these crowded and affluent paragraphs remind one of the performance of a skilful musician who plays an air with one hand and extemporizes variations with the other. But Mr. Choate's political and literary labors are but "trifles light as air" when compared with the immense amount of his professional toils. The jealousy for which the law is proverbial never could have been awakened in his case; for he has been from the first most faithful to his austere mistress. By the common consent of his legal brethren, he now stands, and for many years has stood, at the head of the bar in New England; and as an advocate especially, perhaps no man in the whole country enjoys so high and wide a reputation. As a lawyer Mr. Choate has what may be called an exoteric and an esoteric fame. In his forensic performances the general public are most attracted by his glowing and impassioned arguments to the jury; by the rich fancy and quaint humor with which he contrives to decorate the dryest and seemingly the most hopeless subject; but his brethren at the bar would agree that the eloquence displayed in his addresses is but one ingredient in the sum of his gifts and accomplishments as an advocate. They would say of him, as was said of Erskine by the most discerning of his contemporaries, that he was above all things else remarkable for consummate judgment and unerring tact in the management of causes. He is at once earnest and self-possessed; every faculty is aroused and intent; there are no moments of languor, weariness, or inattention; he never makes a mistake himself or overlooks one in an opponent; he shows the most practised skill in the examination and cross-examination of witnesses; and by the magnetism of his manner engages the sympathies of the jury in cases where the law and the facts forbid him to win the assent of their understandings. Nor need it be said to any member of the bar that no man can be the great advocate that Mr. Choate is, without being also a good lawyer. Indeed, his powers are never seen to greater advantage than in the unpremeditated discussion of the law points that incidentally arise in a trial at *nisi prius*. The neatness of his statement, the grace and accuracy of his language, his ample command of legal illustration, and his persuasive rhetoric always command the admiration of his hearers, and for the moment half win assent even to propositions which, so soon as the voice of the charmer is silent, are perceived to be untenable. Mr. Choate's devotion to his profession is shown by the fact that the ardor with which he engages in a case is wholly irrespective of the amount involved in the issue. The simple relation of counsel and client is enough to command all his powers, all his attainments, and all his accomplishments. In a hearing before a commissioner, a master in chancery, or a referee, with half a dozen persons around him, he is quite as likely to make an eloquent and impassioned harangue, as in an exciting jury trial with a court house thronged with spectators who have been attracted by the hope of listening to him. Nor should we, in summing up his professional merits, fail to enumerate the high-toned decorum and propriety of his bearing toward the bench, and his uniform courtesy toward his brethren of the bar.

CHOCIM, Chotim, or Khotim, a fortified town in the Russian province of Bessarabia, on the right bank of the Dniester, nearly opposite Kamieniec, is surrounded by hills, which lessen the strategetical importance of the fortifications, and gives its name to an archbishopric of the Greek church. The industry of the inhabitants, about 12,000, consists chiefly in furnishing supplies for the army. It was anciently a Moldavian city, and became afterward an important stronghold of the Turks against the Poles; in the history and poetry of the latter nation it figures among the most glorious associations. Gen. Chodkiewicz, commanding through the future king Ladislas IV., repulsed here the assaults of the Mussulmans from his fortified camp, in the last days of his life (1621); John Sobieski, elected king but not yet crowned, routed them here in a battle of scarcely 2 hours (1673). Strengthened by new fortifications since 1718, it was taken by the Russians in 1739, but restored to the Turks; taken again in 1769, and restored again by the peace of Kootshook-Kainarji (1774); then taken by the Austrians (1788), but not maintained; and finally ceded by the peace of Bucharest (1812) to Russia.

CHOCO, formerly a province of New Granada, now a portion of the state of Cauca, comprises that part of the republic which is drained by the rivers San Juan and Atrato; bounded E. by the Antioquian Cordillera and W. by the

; pop. 48,649, of which $\frac{7}{8}$ are negroes or
oes. Quibdo, the capital, pop. about 15,000,
on the right bank of the Atrato, 225 m.
he gulf of Darien. The region is dis-
hed by the poverty of its population and
stible abundance of its mineral de-
uold is obtained with sufficient facility
beds of all the numerous rivers and on
every acre of ground to cause agricul-
be neglected. Every thing that is con-
is imported, except plantains, fruit, and
By spending 2 days in gold washing, the
niners can supply their wants for a week
It is said that in 40 years not more than
have occurred in Choco. Since the
pation of the slaves was consummated in
old mining and all other industrial occu-
have fallen into decay. The exports of
platina do not exceed the sum of
yearly. The other exports, caout-
cocoa, and a coarse sugar, are propor-
y small.

COLATE (Aztec, *chocolatl*), a nutritious
repared from cocoa, the fruit of the *theo-*
aao, introduced into Europe from Mexi-
The ancient Aztecs prepared it with
.: the froth of it is described as being
of such solidity, that it was real-
ue of food rather than of drink, and
cold. The Spanish conquerors did
i uu record their relish of its excellent
and th appreciation of its nutritious
s—a su cup of it being enough in
uo sustain a man through the
uay a march. (Solis, "Conquest of Mex-
l. i. p. 156.) Chocolate is prepared by
cocoa nibs to a paste, and mixing with
us articles to flavor and perfume the
uon. The Aztecs used for this purpose
and different spices, and the French in-
d musk and other perfumes. The Euro-
also added sugar, professedly to render
y portion more miscible in hot fluids, as
to give sweetness to that which no more
uch an addition than does tea or coffee.
stitution of a cheaper article was the real
e; as also of the introduction of the wheat
flour, the sago meal, the various starch-
ants arrow-root, the honey and molasses,
f which were found by Dr. Hassall to
nally compose more than $\frac{1}{2}$ of the choco-
ld in England. If the starch or farina
ntly lessened the quantity of the oil of
oa, it was merely because less real cocoa
d, and because, being attached in part to
or jelly formed of these foreign bodies
water, the oil was thus prevented from
ing at the surface. The addition of these
es involves that of coloring matters,
genuine color may be retained; and
e purpose reddle, Venetian red, umber,
, and in a few instances the highly poi-
metallic salts, cinnabar and red lead, are
to have been employed; and the genuine
g thus so entirely disguised, it has been
xpedient to add some animal fat, as tallow or hogs' lard. The mixtures, whatever they may be, are introduced into the cocoa paste and thoroughly incorporated with it by rolling while it is kept at a suitable temperature. Before cooling, the chocolate is turned in its thin state into moulds, in which it receives the form of the cakes in which it is sold. Thus prepared, the chocolate in common use is an article of very uncertain composition, and it is not strange that it fails to become the favorite beverage which it is in the countries where it is produced. Chocolate has been applied to the manufacture of a variety of sweetmeats. The beverage is prescribed in medical practice as a mild nutritive drink in some acute diseases, and as a good article of diet for convalescents. That it does not always agree with delicate stomachs may, perhaps, be attributed, as well to the unknown substances mixed with it, as to its oily nature. (See COCOA.)

CHOCTAW. I. A W. co. of Alabama, bordering on Miss.; area about 800 sq. m.; pop. in 1850, 8,369, of whom 3,769 were slaves. The Tombigbee river, which flows along the E. boundary of the county, is navigable by steamboats. The productions in 1850 were 4,433 bales of cotton, 269,560 bushels of corn, and 104,911 of sweet potatoes. This county was recently organized, and was formerly included within the limits of Sumter and Washington. It was named from the Choctaw tribe of Indians. Capital, Butler. II. A central co. of Miss.; area about 990 sq. m.; pop. in 1850, 11,202, of whom 2,078 were slaves. It is traversed by Big Black river. Forests of oak, hickory, and other timber occupy much of the land. The remainder is fertile, and in 1850 produced 4,458 bales of cotton, 404,244 bushels of corn, and 23,259 pounds of rice. There were 28 churches, and 406 pupils attending public schools. Capital, Greensborough.

CHOCTAWS, one of the Appalachian tribes of American Indians, who dwelt S. of the Chickasaws, between the Mississippi and Tombigbee rivers, in what is now the central and southern portion of Mississippi and the western portion of Alabama. Dwelling in plains or on gentle hills, they excelled every other aboriginal tribe in their agriculture, and subsisted chiefly on corn, placing little dependence on the chase. They were called Flats or Flatheads by the English and French traders, because all the males had the fore and hind parts of their skulls flattened or compressed, which was effected by a gentle continual pressure on the head of the child soon after birth. They numbered over 4,000 warriors, and maintained their independence, but allied themselves with the French, whom they assisted in exterminating the Natchez, and together with whom they were discomfited by the Chickasaws. By a treaty negotiated in 1786, they acknowledged the sovereignty of the United States, and were confirmed in possession of their territory. When in 1813 a party of the Creeks, who had recently been visited by Tecumseh, attacked and massacred the occupants of Fort Mimms in Alabama, the Choctaws volunteered to march against them with the Mississippi militia. In 1816 they ceded a tract of land in Alabama, for which they received $10,000 down, and an annuity of $6,000 for 20 years. They were visited by missionaries sent by the American board of commissioners for foreign missions in 1818, and began to make rapid progress in agriculture and some of the mechanic arts, raising cotton, and manufacturing it into cloth and garments. Though from the remoteness of their territory there had been little collision between them and the United States, they were included in the plan of colonization by which all the Appalachian Indians were about the year 1837 transferred from the territory of the southern states westward of the Mississippi. The government obtained a cession of land from them in 1830, and in 1837, under convention with their kinsfolk, the Chickasaws, they ceded their remaining lands, 7,000,000 acres of which were in Mississippi. The whole amount of territory which they have ceded to the national and state governments is 19,934,400 acres, for which they have received in exchange 20,030,912 acres, on which they now reside, and $2,228,730 in money and goods. The Chickasaws having become in most respects an incorporate portion of the Choctaw tribe, they removed together, prior to 1839, under officers appointed by the federal government, to a tract in the south-western part of the Indian territory, bounded N. by the lands of the Creeks and Cherokees, E. by Arkansas, and S. and S. W. by Texas. Their country is divided into 4 districts, their principal settlement being in the eastern district, named Apuckshanubbe. They are governed by a written constitution, elect their chief for 4 years, and have a national council of 40 members, and a regularly organized judiciary, with trial by jury, and an appeal to a supreme court. Their only recent political difficulties have arisen from their irritating alliance with the Chickasaws. They are industrious, frugal, and making progress in those arts which are the basis of civilized and prosperous communities. They raise the cereal grains, cotton, horses, and cattle, and possess mills, good dwellings, and highways made according to legal enactments. Spinning and weaving, and many of the minor manufactures and mechanic arts, have been introduced among them. Their schools and academies are among the best institutions in the Indian territory, and they have vested funds, the interest of which they receive through the United States treasury, sufficient to place the facilities for an education within the reach of every Choctaw child. They are gradually adopting American manners, usages, and garments; the English language is taught in their schools, and is sometimes spoken in their families; and they have an excellent Choctaw translation of the entire Gospels. For their advancement in civilization this tribe is much indebted to Christian missionaries who have for many years resided and supported schools among them. The pay-rolls of 1853 indicated the number of the Choctaws, exclusive of the Chickasaws, to be 15,767.

CHODKIEWICZ, Jan Karol, a Polish general, born in Lithuania in 1560, died at Chocim, Sept. 27, 1621. He served against the Cossacks, defeated Charles IX. of Sweden in 1605, and afterward served against the Russians and the Turks.

CHODOWIECKI, Daniel Nicolaus, a German designer and engraver, born at Dantzic, Oct. 16, 1726, died in Berlin, Feb. 7, 1801. He was instructed in miniature painting by his father, and subsequently painted snuff boxes. He was encouraged to study enamelling, and soon attracted attention by the beauty and finish of his productions, some of which came under the notice of the academy of Berlin, and procured him a commission to make a set of designs for their almanac. The manner in which he executed these established his reputation. He thenceforth devoted himself almost exclusively to designing and engraving; he produced the plates for Klopstock's "Messiah," "Don Quixote," Lavater's "Physiognomy," editions of Shakespeare, Voltaire, La Fontaine, and many other works.

CHODZKO, Alexander Boreyko, a Polish traveller, linguist, and poet, born July 11, 1804, at Krzywice, in Lithuania, studied oriental languages at Wilna, went in 1829 to Persia, where he served as dragoman and consul, returned in 1841 to Europe, and has since resided mainly in France. As an author he is known by works in Polish, English, and French. His Polish poems, containing translations from the Persian, appeared at Posen, 1833. His "Specimens of the Popular Poetry of Persia, as found in the Adventures and Improvisations of Kurroglou, the Bandit Minstrel of Northern Persia," published in London, 1842, at the expense of the oriental translation fund, are valuable as spirited translations, and for an appendix, containing fragments of the original songs in the Tuka-Turkman, Perso-Turkish, and Zendo-Persian languages.

CHODZKO, Jacob Leonard, a Polish scholar, born at Oborek, in the palatinate of Wilna, Nov. 6, 1800, studied at Molodeczno, where he enjoyed the friendship of Zan, and at Wilna, under the guidance of the historian Lelewel. Having travelled as secretary of Prince Oginski through nearly all Europe, he established himself in 1826 at Paris, where he published a memoir of the prince, with an introduction entitled *Observations sur la Pologne et les Polonais* (Paris, 1827), and commenced collecting materials for a history of his country from the death of Augustus III. Afterward he published the "History of the Polish Legions in Italy, under the command of Gen. Dombrowski" (Paris, 1829, 2 vols.). During the revolution of July, 1830, Lafayette appointed him his aide-de-camp; and after the outbreak of Nov. 29 of the same year in Warsaw, he acted as agent of the revolutionary government in France. He was an active member of the

Pc and American-Polish commit-
er the failure of the revolution, as
the national Polish committee of
l has since zealously pursued his lit-
ccupations, writing for French cyclopæ-
d periodicals, publishing the standard
of Polish literature, and a number of
historical writings remarkable for their
compilation.

NIX, a measure of capacity among the
Greeks. Its size is variously given, and
obable that it actually differed in the
t states of Greece. Some accounts re-
it as containing 3 *cotylæ*, or about 1.487
nglish; others make it equal to 1.982
and still others give it as equal to 3.964

LUS. I. An ancient Athenian tragic
mporary with Thespis and Æschylus,
also with Sophocles. He first com-
e tragic prize 523 B. C., and was
bly esteemed as an author in the year
. He carried off the tragic prize no less
times, and is said to have composed 150
beside other works, all now lost. II.
OF SAMOS, an ancient Greek epic
d in the 5th century B. C.
Herodotus. A few scattered
s only are preserved of his poems.

RINÆ, the name of certain small sea-
the Athenian dicasts made use of

that part of the church occupied by
. It is separated from the chancel,
st separated from the nave in the
Constantine. In the 12th century it
with walls, but on account of the
effect the ancient balustrades have
restored. In nunneries the choir is
rtment separated by a grate from the
the church, where the nuns chant the
—A company of singers in different
cially employed in the performance of
in churches, is also called a choir.
ent day the singers are sometimes
n a gallery over the entrance to the
and opposite the pulpit, and sometimes
side of the pulpit or chancel on the
the church.

ISEUL. I. ÉTIENNE FRANÇOIS, duke of,
tesman, born June 28, 1719, died in
, 1785. He was first known as count
ille, and entered the army and attained
of lieutenant-general. Mme. de Pom-
whose friendship he enjoyed, procured
the embassy to Rome, and afterward
nd finally, in 1758, the department
irs. A little after, he was created
r; in 1761, he was placed at the
the war department, transmitting his
ce to his cousin the duke of Praslin,
presided over the navy. In 1766, he
his functions as minister of foreign
He signalized his administration by
seful reforms in the army and navy.
pare against the attacks of England,
Choiseul concluded the treaty known as the family compact (*pacte de famille*), by which all branches of the Bourbons were united to resist foreign aggression. He also published in 1764 the famous edict for the suppression of the Jesuits in France. When his friend Mme. de Pompadour died, he could easily have preserved his office by courting the favor of her successor, Mme. du Barry; but he treated her with such contempt that he was dismissed and banished to his estate at Chanteloup. The regard in which he was held followed him to his place of exile, and his friends resorted thither to pay their respects to the fallen minister. He had endeavored, but in vain, to prevent the division of Poland, and when the event took place, Louis XV. said: "This would not have been if Choiseul had been minister." He died childless, and notwithstanding his income from his offices, and the large fortune brought him by his wife, the daughter of the wealthy financier Crozat, he was in debt to such an amount that all his estates were barely sufficient to satisfy his creditors. II. CLAUDE ANTOINE GABRIEL, duke of, a peer of France, born Aug. 26, 1760, died in Paris, Dec. 2, 1838, was a nephew of the preceding, by whom he was educated. As colonel of dragoons, in 1791, he was active in preparing the flight of Louis XVI. and the royal family. On the failure of this attempt he was arrested, but recovered his liberty by the amnesty granted on the acceptance of the constitution by the king. Appointed first gentleman usher to the queen, he attended her until her imprisonment, and left France only when a price was set upon his head. Raising a regiment of hussars, he joined the royalist army, was taken prisoner, escaped from prison, embarked for India, was wrecked on the coast of France, arrested, sentenced to death, but saved by the revolution of Brumaire. He kept aloof from public life during the reign of Napoleon, but on the restoration he was appointed a member of the new chamber of peers, where he came forward as a champion of a constitutional form of government. He refused to sentence Ney to death, pleaded for Gen. Merlin, implicated in a conspiracy, resigned on the advent of the Villèle ministry the rank of major-general of the national guard, and thus became so popular that when the July revolution broke out, he was, without his knowledge, nominated, with Gérard and Lafayette, a member of the provisional government. He was afterward appointed aide-de-camp to Louis Philippe and governor of the Louvre, retaining at the same time his seat in the new chamber of peers.

CHOISEUL-GOUFFIER, MARIE GABRIEL FLORENT AUGUSTE, count of, a French classical scholar, born in Paris, Sept. 27, 1752, died June 20, 1817. He studied under the direction of Barthélemy, travelled several years in Greece, and in 1782 published the first volume of his *Voyage pittoresque en Grèce*. He was then made ambassador at Constantinople. On the outbreak of the revolution, he adhered to the king, and was proscribed by the revolutionary government. He retired to Russia, where he was intrusted with the direction of the academy of fine arts and the imperial libraries. In 1802 he returned to France. The 2d part of his great work was published in 1809; the last part did not appear till after his death, in 1824. His collection of antiquities is now in the museum at the Louvre.

CHOISY, François Timoléon de, a French writer, born in 1644 at Paris, died Oct. 2, 1724. His delicate appearance induced his mother to dress him in feminine attire; he continued to wear it for many years, and was in the early part of his life notorious for his dissolute habits. In 1676 he accompanied the cardinal of Bouillon to Rome to attend the election of Pope Innocent XI. In 1685 he went on a mission to the king of Siam, of which he has given an interesting account. On his return to France, he devoted his whole time to literary pursuits, was elected to the academy in 1687, wrote the history of several French kings, and attempted to present the annals of the church in a more accessible form than the learned Fleury. His *Mémoires pour servir à l'histoire de Louis XIV.*, which have been printed in Michaud's *Collection de mémoires*, and his *Journal du voyage de Siam fait en* 1685 *et* 1686, are written in a lively and agreeable style.

CHOKE-DAMP, the name given by miners to the irrespirable gas (carbonic acid) which fills the mine after an explosion of fire-damp. This gas is also found in badly ventilated parts of mines, its presence being detected by the difficulty of making candles burn, and the violent headaches it brings upon those who remain for any time where it is abundant. When carbonic oxide is present, the gas is exceedingly dangerous to breathe for an instant; but one may sometimes stay with safety for a minute or two in an atmosphere of choke-damp in which a candle cannot be lighted.

CHOLIAMBIC (Gr. χωλιαμβος, a limping iambus), in ancient poetry, an iambic verse whose last foot, instead of an iambus, is a spondee or a trochee. It is frequent in the satires of Hipponax, and in some of the comic poets.

CHOLERA (Gr. χολη, bile, ρεω, to flow), a name applied to 3 diseases, generally classed among those of the digestive tube, as upon this their most striking symptoms manifest themselves; these diseases are *cholera morbus*, Asiatic cholera, and *cholera infantum*. I. Cholera morbus, or sporadic cholera, is generally preceded by premonitory symptoms, as diarrhœa, abdominal pains, headache, shivering, nausea, &c.; but it often also begins at once with the characteristic vomiting and purging of bile; in the severest forms there is great pain in the abdomen, and violent cramps, especially in the legs. When caused by improper food the fever may be high, with hot skin and great thirst; but in cases seemingly dependent on some atmospheric condition, with pain and cramps, the surface is pale and cold, the features pinched, the eyes sunken, the prostration great and sudden, and the urinary secretion either suppressed or very scanty and dark colored; it is very apt to come on in the night. It is a disease of warm and damp climates and seasons, and in temperate regions generally follows the ingestion of improper food in the latter part of summer, when the system is enfeebled by excessive heat: nuts, cucumbers, and unripe or over-ripe fruits, are said to be very frequent exciting causes; it may also occur after any cause which violently excites the nervous system, either mentally or physically, painfully or pleasurably. It usually reaches its highest point in a few hours, and as quickly disappears, leaving the person tolerably well; it is, however, not unfrequently fatal. Post-mortem appearances throw no light upon the nature of the disease; in some cases nothing is seen to account for death; in others the liver is found gorged with blood; in others, traces of inflammation or even of gangrene in various portions of the intestines, from the highest to the lowest portions. All we know is that there is an increased action at the gastro-intestinal mucous membrane, and probably in its secreting glands; it cannot be determined whether in its essence it is a disease primarily affecting the nervous system, the liver, or the intestinal mucous membrane. In ordinary cases opiates are the surest remedies, combined with camphor and stimulants, if there are any signs of collapse; hot applications are serviceable in relieving cramp, and in bringing up the heat of the extremities; sinapisms and stimulating liniments are also of advantage. II. Asiatic or epidemic cholera has been known in India for many centuries, and has devastated the country several times since it became known to the English; it is said to have destroyed 30,000 lives in 1764, in upper Hindostan; it has long been endemic there, but the great epidemic which travelled over the world originated in 1817, in the delta of the Ganges, about 100 miles north of Calcutta. In almost all epidemics there have been certain premonitory symptoms, called by some authors the first stage of the disease, to which the name cholerine has been given; these consist of a general feeling of uneasiness and weakness, nausea, with diarrhœa and perhaps vomiting; the dejections at first, though frequent, are natural; but when the second stage or true cholera supervenes, in the course of a few hours, the evacuations become liquid, odorless, and resembling rice water; the strength is suddenly reduced, the muscles of the abdomen and limbs are painfully cramped; the pulse grows weak, the skin cold; the features assume a frightful cadaveric aspect; the cold and shrunken appearance of the skin indicates the stage of collapse; the urine is suppressed; the voice is husky; the mucous membranes of the eyes, nose, and mouth are dry; the powers of life gradually fail, the intellect usually remaining unimpaired to the last; the facial expression is characteristic, the person resembling a living corpse, and indeed he is liable to die very suddenly, in the act of getting up, speaking, or drinking. At the end of from 20 to 24 hours death closes the scene, or reaction begins to take place; in favorable cases the skin becomes warm and moist, the urine begins to flow, the secretions are reëstablished; the ejected matters become tinged with bile, and are diminished in quantity; the cramps cease, the thirst diminishes, the circulation begins to move freely, and the struggle between life and death is decided in favor of the former by a refreshing sleep. The rice-water discharges, the icy coldness, the disturbance of the circulation, the cramps, and the *facies cholerica*, present an assemblage of symptoms quite characteristic of this disease. In the most malignant epidemics the patient seems to be struck down at once, living but a few hours; in other cases the disease may be prolonged to days. The rice-water discharges have been found on analysis to contain the elements in which the blood is deficient, viz., serum, alkali, and the saline constituents; this has given origin to one favorite plan of treatment. Changes occur in the blood, this fluid becoming like tar or molasses in color and consistency, in proportion to the intensity and duration of the collapse; it is so thick that it will not in many cases flow from an opened artery; the serum is in less quantity than in healthy blood, and of higher specific gravity; the clot is in greater proportion, and is not reddened by oxygen on account of the small amount of saline matters; the amount of albumen is lessened, as also is the fibrine, according to Thompson. The pathological appearances throw no light on the nature of the disease: the lividity of the skin disappears after death, and the temperature is said to rise a little; putrefaction takes place slowly, if the disease has run its usual duration; the stomach and intestinal tube have been found variously injected, and the follicles remarkably developed; foreign physicians have laid great stress upon granular isolated pimples along the intestinal canal, and especially toward the end of the ileum, which are probably only the abnormally developed follicles or glandulæ; in the venous system there is found an accumulation of thick black blood.—The nature of cholera is as yet quite undetermined, though plausible speculations are numerous; it has been regarded as an inflammation and an irritation of the digestive tube, as an affection of the sympathetic and spinal systems of nerves, as a paralysis of the organs of circulation and of the intestines, as a disease of the blood itself from a miasmatic cause, as an affection of the intestinal absorbents, and as various combinations of the above disorders. In the great majority of cases the cause, whatever it be, acts on the vessels of the mucous membrane, causing them to part with the watery portions of the blood, which becomes in consequence too thick for proper circulation; this alone would explain the lividity, the coldness, the arrest of the secretions, and the collapse; but in some epidemics the morbific cause is so violent as to produce a fatal collapse from the beginning, before any unnatural discharges have appeared; it would seem, therefore, that the nervous system is that which is primarily affected, and probably the sympathetic ganglia which preside over the vital actions of the minute vessels of the intestines. An equal mystery and variety of opinion prevail as to the causes of cholera; the air has been tortured in vain to reveal the secret; no sidereal, telluric, magnetic, electric, or appreciable atmospheric changes have been satisfactorily connected with its endemic or epidemic appearance; animalcular and fungous growths have been equally unable to account for it; of its primary cause we know no more than we do of that of small pox, yellow fever, or any epidemic disease. But there are certain predisposing causes which doubtless favor its propagation, such as personal and public uncleanliness, errors in diet, drunkenness, and misery; fear, which always exists during fatal epidemics, in this instance amounting to *cholera-phobia*, impresses many with the idea of drugging, who thereby render themselves mentally and physically more liable to its attack. Unprofessional people are prone to believe in contagion, and accordingly most persons perhaps think that cholera is contagious; physicians even were once divided in their opinions on this point, but probably at the present time very few could be found who would maintain its contagiousness. When great numbers of persons are exposed to the same epidemic influence, the idea of contagion is the most natural one to account for the occurrence of many cases in a limited district; but the whole history of the progress of cholera for the last 40 years shows conclusively that, though endemic and epidemic, it is not a contagious disease. Some courageous physicians have gone so far as to inoculate themselves with the blood, bile, and discharges of patients in every stage of the disease, and without any ill consequences. The history of cholera has afforded some of the noblest instances of self-sacrifice and heroic devotion to duty on the part of physicians and clergymen; at times when fathers deserted their children, when dearest friends dared not approach the house of death, the physician and the clergyman fearlessly discharged their duty, carrying physical and spiritual relief to the suffering and the dying; when even the watchmen have fled the city, the noble men of these professions have remained. It will be seen that cholera morbus and the epidemic cholera resemble each other in certain symptoms; yet the former more properly belongs to diseases of the digestive tube, and the latter to diseases of innervation; when epidemic cholera is raging, it is very common to see the summer cholera morbus putting on some of the characters of the prevailing epidemic; the causes, fatality, and season of prevalence, among other things, will generally suffice to distinguish the two diseases.

—Endemic for centuries in the marshy region of the Ganges, it suddenly, in Aug. 1817, broke away from its usual confines, and made its appearance at Calcutta in the following month, where it raged for more than a year; it thence extended northward to Nepaul, southward to Madras and Ceylon, and to Malacca; in 1819 it extended to the Burmese empire and the countries to the east; in 1820 it arrived in Bombay, where it destroyed 150,000 persons; thence to Madagascar and the east coast of Africa, to Borneo, Celebes, China, and the Philippine islands. In 1821 it advanced to the northwest, pursuing the course of rivers and travelled roads to Persia, Arabia, and Asia Minor; here it seemed to stop for a time, but in 1823 it reappeared and devastated central Asia; in 1829 it appeared in southern Russia, and at Moscow in 1830; in 1831 it spread over most of central Europe, and appeared in England, at Sunderland, in October; in Jan. 1832, it was in Edinburgh, and in February in London, where, however, its ravages were small; it broke out in Paris in March, and spread rapidly over France. On June 8, 1832, it first appeared on this side of the Atlantic, at Quebec, and on June 10 at Montreal; on June 21 it suddenly appeared in New York, the intermediate districts escaping its visitation; the disease spread in various directions, reaching Philadelphia, Albany, and Rochester in July, and Boston, Baltimore, and Washington in August; in October it spread from Cincinnati to New Orleans. In 1834 it revisited this country, and cannot be said to have reigned epidemically here since that time, though it reappeared in Europe during 1835, 1836, and 1837. A few years ago something of a panic was created in our northern cities by the appearance of a disease resembling, if not a mild type of, Asiatic cholera; hospitals were extensively organized in anticipation of a fearful epidemic, which the filth of the large cities fully justified; but the disease proved comparatively mild and soon disappeared, being confined chiefly to the dirtiest and most densely inhabited districts, and evidently endemic. From statistics made in England, about 38.5 per cent. of those attacked died; more than 20,000 perished in Great Britain, and 5,000 in London alone; in Paris 18,000 perished, about 49 per cent.; in Russia the mortality was dreadful, 58.6 per cent.; it raged in midwinter at St. Petersburg, and with great fatality, showing that the morbific cause is not destroyed by intense cold; in this country the deaths were from 40 to 50 per cent. The danger in cholera is less the longer a patient lives under it; one half the deaths happen within 24 hours of seizure.—The treatment of the first stage of cholera consists in keeping up the natural state of the skin, by external heat if necessary; in clearing the stomach and bowels, if loaded. In the southern and western states mercurials were given in immense doses to excite a new action in the system, this practice being taken from the physicians of India; op
serviceable in all stages; the inte
be relieved by iced drinks; for th
sugar of lead and opium, ratanhy
astringents are employed; strychni
spoken of for arresting vomiting an
and combating the nervous prost
internally administered or applied e
In the stage of collapse warm d
frictions, with perhaps internal stim
been as successful as any remedie
cramps friction, the tourniquet, an
are generally used. To supply the
salts to the blood, and thus to rend
and fit for circulation, solutions of
alkaline carbonates have been tried
as enemata, and as injections into
vessels; the relief was immediate b
manent, as this medication relieved
only, without modifying the mor
Various specifics have been reco
none deserve the appellation. If
covers from the collapse, the reac
system must be kept within proper
revulsives to protect the vital o
no definite course of treatment c
down, as each epidemic, and alm
requires the pursuance of a plan
left only to the sagacity of the physic
a choleraic tendency is observable,
ance of the exciting causes of diarrh
much to preserve health; and public
then, if at no other time, should at
sanitary condition of the favorite
disease. The general condition of
city is very far from that which we
sirable during an invasion of chol
the mortality from that or any othe
disease would there be frightful. I
infantum, a disease very fatal among
neglected children in large cities,
cholera in many of its symptoms.
gin with simple diarrhœa, or it ma
suddenly with vomiting and purgin
frothy fluid, sometimes of a gree
which soon degenerates into a water
which very quickly prostrates the
there are almost always signs of fe
tion, abdominal pain and tende
thirst, and sometimes coldness of
as the disease progresses the face be
and shrunken, with a choleraic exp
infant looking cadaveric, though ea
to consciousness; the pulse beco
the respiration oppressed, and a c
like that of disease in the brain,
In extreme cases death may occur
hours; but as generally seen, and i
cases, the disease is prolonged throu
days. It has been estimated that
the children who die under the age
die of this disease; it is certainly
scourge of large cities during th
months, and is evidently due to the
action of excessive heat, improper
foul air; it is a disease of summer,

, and almost exclusively
infants in confined and
most fatal in children be-
3 and 18 months, during the
first dentition, and in those
: there can be no question
swill-fed cows of New
l cause of fatal cholera
children of the poor and
pathological characters,
d. consist of traces of inflam-
n of the intestinal mucous
follicles. The disease is cer-
ous, rarely epidemic, but al-
emic or the result of local
s of the treatment are the
rally, modified accord-
se: the administra-
stimulants; the
milk for their op-
g of swelled gums; fomen-
l bandage to the abdomen;
with alkalies after the
d; warm baths and cool-
ve all, change of air from
country or the sea-shore, and a

CHOLLET, a canton and town of
nt of Maine-et-Loire, on the
of Angers; pop. of the former
the latter about 8,000. The town
in manufactures, having es-
the spinning of cotton and
known as *toiles de Cholet* or
bleacheries, tanneries, and
are altogether 40 industrial
the canton. The annual value
manufactured in the town and
district is estimated at $5,000,-
re is also considerable trade in cat-
town suffered greatly from civil
the revolution, its manufactures
yed, and the workmen put to
rsed. Two battles were fought
between the republicans and the

A. a decayed town of La Puebla,
d on the table-land of Anahuac,
ve the sea, 15 m. W. N. W. of the
bla; pop. 10,000, wholly Indians.
the capital of an independ-
same name, but is now little
village rapidly sinking into insig-
It has still some manufactures of
ds, and is surrounded by well
plantations of corn and
borhood stands the largest
pyramids of Mexico, consist-
cial, or as some travellers have
atural hill, cased with layers of
and plaster, and forming a trun-
l of 4 equal sides, facing the car-
divided into the same number
ording to Humboldt's measure-
160 feet in perpendicular height,
at the base, and covers an area of 45 acres. Latrobe states its elevation to be 177 feet, and the length of its base 1,425 feet. It is accessible on all sides, though time has destroyed the regularity of its outline, and covered its sides with trees and shrubs to the very summit. The platform on its top is more than an acre in extent, and is surrounded by a parapet. In its centre stands a chapel to the Virgin, erected by the Spaniards, where masses are celebrated. A part of this pyramid was laid open some years ago by the construction of a road across it, when a cavity was disclosed containing a number of vases, idols in basalt, and 2 skeletons. It was built in honor of the deity Quetzalcoatl, but its precise age is unknown. The Aztecs found it here when they settled in Anahuac. Close by are 2 smaller pyramids.—When the ancient empire of Mexico was in its glory, Cholula was the commercial emporium of the plain, the seat of skilful manufactures, and a holy city where each race had its temples and sacrifices, and whither pilgrims resorted from the most distant quarters. Its streets were gay with the pomp of frequent festivals and processions, while on the summit of the great pyramid rose perpetual flames from the temple of Quetzalcoatl. This temple, a magnificent structure, and an object of profound national reverence, contained an image of the god, wearing about his neck a golden collar, in his ears pendants of turquoise, and on his head a mitre with plumes. He bore a shield covered with emblems, and held in one hand a jewelled sceptre. It is related that at this and the numerous other shrines throughout the city 6,000 human beings were sacrificed every year. Cortes, who stopped at Cholula on his march to Mexico, described it as a beautiful and well fortified town, containing about 20,000 houses, beside which the suburbs were computed to embrace about as many more. He called it Churultecal. He was received by the inhabitants with apparent kindness, but learning that they were plotting against him he fell upon them unexpectedly, and gave the city up for several hours to massacre and pillage. In his letter to Charles V. he rates the loss of life at 3,000; most accounts say 6,000, and some estimate it still higher.

CHOMEL, Auguste François, a French physician, member of a family which has produced a succession of eminent physicians during the last 2 centuries, born about 1789, was at an early age attached to the medical service of the hospitals in Paris. Under the instruction of Boyer, Corvisart, and Pinel, he made rapid progress in his studies, and in 1813 he published an *Essai sur les rheumatismes;* in 1817, *Élémens de pathologie générale;* in 1821, *Traité des fièvres et des maladies pestilentielles,* which was attacked by Broussais, but which has outlived Broussais' theory, and made a reputation for the author. In 1827, Chomel was appointed professor of medicine at the faculty of Paris, as successor to the celebrated Laennec, whose views he held and taught in the same chair. His practice is perhaps now more lucrative than that of any other physician in France. In 1836, Genest, Requin, and Sestier published their notes of his clinical lessons, in 3 vols. 8vo., on typhoid fevers, rheumatisms, and pneumonia, which are still deemed standard works in France.

CHOMIAKOFF, Alexei Stefanovitch, a Russian poet, born in 1804. He served for a time in the army, but after the peace of Adrianople devoted himself to literature. His most remarkable productions are *Yermak*, a tragedy, whose hero is the adventurer who gave Siberia to Russia; *Dmitri Samozvanietz*, or *Pseudo-Demetrius*, also a historical tragedy; and a collection of lyrical poems. He is esteemed for the harmony of his versification, and the national character of his songs.

CHONTALES, a district of Nicaragua, N. E. of the lakes Nicaragua and Managua, separated from Honduras by the district of Segovia. The chain of the Cordilleras called the Alto Grande mountains traverses the district in a N. W. and S. E. direction, making up the greater part of it. The mining region, which gives the principal importance to this portion of Nicaragua, lies along the slopes of the mountains, and in this are several towns, mostly occupied by the native Indians. One of the most important of these is Libertad, 35 m. N. E. from Lake Nicaragua. The gold mines in its vicinity, on the rivers Mica and Bola, branches of the Bluefields, were worked by the early Spanish settlers, and are still worked by the Indians. The gold appears to be obtained from decomposed auriferous slates, which are ground by arrastres. In the same region are found veins of silver ores, the specimens from which recently brought to New York indicate the existence of mines of great richness. The favorable position of this district, so easily accessible from the lakes, and enjoying the salubrious and delightful climate of the mountains, must encourage a thorough investigation of its resources whenever the political condition of the country is settled. Near Lake Nicaragua a bed of coal has been opened in the district, which is probably of the nature of the tertiary coals of South America. Among the mountains are vast plains covered with grass, which give support to immense herds of cattle and horses. It is stated that 5,000 hides might annually be exported from the district. Much good timber is found in the vicinity of the mines, among which are species of oak and pine. Fruits of the tropics grow abundantly in close proximity to those of the temperate zones, and the articles necessary for subsistence are easily obtained in the greatest abundance.

CHOPIN, Frederic, a Polish pianist and composer, born in 1810, at Zelazowa Wola, near Warsaw, died in Paris, Oct. 14, 1849. He early developed a remarkable talent for music; performed in public at the age of 9, and also studied the science of harmony. He left Poland shortly before the outbreak of the revolution of 1830, and began to attract the attention of the musical world during his travels in Germany, winning a few years later a high reputation by his triumphs in France and England. Thoroughly acquainted with the science of musical composition, he possessed beside a true originality of ideas and a natural genius, which excelled in expressing delicate, fanciful, or passionate inspirations. He was as much a poet as an artist at the piano, and exercised a sort of fascination over his hearers by overflowing feeling, unexpected effects, and a sort of nervousness which made his own emotion contagious. This is the reason why those who never heard him can scarcely have an exact idea of the peculiarities of his execution, although he formed very distinguished pupils, and has left 2 concertos and a great number of studies, mazurkas, waltzes, &c., on which his style is clearly impressed. To read his music is not enough; one should have heard it rendered by himself. Of course Chopin was a great favorite with the Parisian world, a medium most congenial to all artistic celebrities. After the revolution of 1848, Chopin went to England, whence he came back to Paris in the following year, but to die. He was surrounded by friends in his death as he had been in his life, and he expired in the fulness of his fame, without having experienced the inconstancy of popularity, suffered from the wane of life, or even suspected the decline of his renown.

CHOPTANK RIVER rises in Kent co., Del., flows S. W. into Maryland, and near the S. extremity of Talbot co. spreads into an estuary several miles wide and nearly 20 m. long, through which it empties into Chesapeake bay; total course, 100 m. It is navigable for sloops to the mouth of Tuckahoe river, a distance of about 50 m.

CHORAGIC, partaining to the choragus. Thus, choragic monuments, among the ancient Greeks, were erected in honor of those choragi who gained the prize for producing the best theatrical or musical entertainments. The remains of 2 of these monuments are still seen at Athens.

CHORAGUS (Gr. *χορος*, dance, chorus, and *αγω*, to lead), a functionary among the ancient Athenians who paid the expenses attendant on the equipment and instruction of a chorus. Originally, the chorus in dramatic representations was selected from the citizens of the state; but, as music and dancing became more artistic, there arose the distinction between spectators and performers. Salaried artists were employed, and at length the entire superintendence of all the details of a theatrical representation was intrusted to a single individual, called the choragus, who was selected by the state, and upon whom rested all the expenses incurred in bringing out the show. Each of the 10 tribes furnished a chorus of dancers and musicians, and chose a citizen to fulfil the duties of choragus. The person thus elected immediately assembled the performers,

furnished them with
time of their train-
at own expense, pro-
such food and drink as
or ve the voice. The
for choice of teachers;
ed upon the success
tic or lyrical con-
the tor became a
The office of cho-
ity; for religion and
between tribes and states,
tion; and the cho-
have exhibited the
received as a prize a tripod,
consecrated in the
inscribed the name
and of his tribe.
at Athens formed by
ood temples.

ed melody of a peculiarly
character, corresponding to
tune, and very generally
us worship of Germany. As
that which relates to a

dern music, a combination of
uency of whose vibrations has
al ratio; that is, of sounds
is in accordance with the
RD, in mathematics, is
t line connecting 2

St. Vitus's Dance.

(Gr. χοριαμβος), in prosody,
of a trochee or a choree and
h the first and fourth are
second and third short. It is
in lyric poetry, in which it is a
as in the choruses of the
and the odes of Horace.
which it predominates are named
which there are several varie-

Louis, a Russian painter and trav-
German parents at Ekaterinoslav,
1795, died at Jalapa, in Mexi-
, 1828. He accompanied Biber-
Caucasus in 1813, and sketched the
plants of that region. In 1814
ue in his voyage of circumna-
1819 he went to Paris, and
publication of the *Voyage pit-*
monde (Paris, 1821-'28),
formed the most valu-
by Cuvier and Cha-
dissertations by Gall.
des régions équinoxiales
was the complement of this work.
to study historical painting in
Gérard and Regnault, and assist-
of these masters upon his "Con-
es X." Having undertaken a
ico and Central America
d Henderson, he was
near Jalapa.

CHORON, Alexandre Étienne, a French musical composer, born at Caen, Oct. 21, 1771, died in Paris, June 29, 1834. His own teacher, he invented a system of notation which enabled him to preserve the songs that he heard or composed. He afterward studied music under the best masters, but was equally interested in the physical sciences and mathematics. In 1794 he was appointed chief of brigade to the polytechnic school, where he passed several years. In 1815 he became director of the royal academy of music, which office he held for 17 months. He founded in 1817 a musical school for children, which afterward took the name of *Institution royale de musique religieuse*. His most important work is his *Principes de composition des écoles d'Italie*. He left many others unfinished, among them a *Dictionnaire historique des musiciens*.

CHORUS (χορος), in Greek, a dance, and a dancing circle or group. Choruses were integral parts of the Grecian drama, both tragic and comic, and were developed with it from its first rudiments in the public religious processions in honor of Dionysus (Bacchus), with dithyrambic songs, dances, jokes, the wagon and sacred goat, through the improvements of Thespis, a contemporary of Solon (about 590 B. C.), who created a kind of stage, and introduced an actor reciting in monologues the deeds of the gods and heroes, and through those of Æschylus, who added another actor, shortened the songs and dances, and introduced the dialogue, down to the sublime creations of Sophocles and Euripides. The chorus being of Doric origin maintained its solemnity in form, and even in dialect. In its final state it was, in the tragedy, a group of persons of both sexes, the elders of the people, priests, counsellors of the king, matrons, captive virgins present as spectators at the scene of the action, representing to some extent in their lyrical utterance the emotions and thoughts of the audience. When the actors paused, the chorus sung or spoke, accompanied by solemn music, sometimes only through their leader, called the coryphæus, sometimes through different parts addressing each other and replying, while moving from one side of the stage to the other, in so-called strophes (turns), antistrophes (counter-turns), and epodes (after-songs), enhancing the impression of the action by their remarks, by expressions of joy, sorrow, admiration, or horror, as caused by the things seen; by hymns of thanks, or supplications to the gods; or addressing the heroes of the scene, advising or consoling, warning or reproving in moralizing strains. It is thus that the chorus, standing between the heroes and the people, reflected as a mirror the conscience of the former and the consciousness of the latter, both affected by mighty events and tragic developments. The chorus thus forms the distinctive feature of the ancient drama, whose imitation has often, and almost always unsuccessfully, been attempted by modern poets, as for instance Schiller in his *Braut* *von Messina.* At the representation of the *Eumenides* of Æschylus the feeling of horror caused by the 50 members of the chorus, who were all attired to represent furies, was so fatal to women and children, that the ancient number had to be limited; afterward it usually consisted of 24 or 15. In the comic or satirical drama the chorus consisted of a satyr, a Silenus and Sylvanus, and had its songs and dances, mostly of a frivolous character. The providing for the choruses, the equipment and instruction, was in Athens an honorable though burdensome office, called *choragia.*—In modern music, a chorus is a composition in several parts, each of which is to be sung by a plurality of voices, while all the parts are to be combined together in one simultaneous performance. The term is also applied to the performers who sing these parts. In operas and oratorios the chorus is indispensable to afford relief to the solos, duets, trios, and the like, as well as to express the culmination of any sentiment or passion; and composers have often made use of it with the happiest effect where the orchestra or single voices would prove totally inadequate. In secular music, the "Conjuration" chorus in Rossini's "William Tell," and the "Benediction of the Poniards" in Meyerbeer's "Huguenots;" and in sacred music, the choruses in Handel's oratorios, and particularly in the "Messiah," are admirable specimens of this form of composition, and when well performed, with full orchestral accompaniments, produce the most sublime and thrilling effects of which music is capable.

CHOSE IN ACTION, in law, thing in action, is simply a right dependent on the result of an action. For example, a debt is a chose in action, seeing that it is only a liability which may be disputed; when judgment is obtained, the right is absolute. By the English law a chose in action is not assignable, although in fact it is assigned continually, the assignor remaining trustee for the assignee. This empty distinction has been abolished by the laws of New York.

CHOSROES, or **Khosru**, I., king of Persia (A. D. 531-579), surnamed by historians the Just, by those of his nation Nushirvan (noble spirit), one of the ablest and most remarkable monarchs of the East, was of the house of Sassan, and the son and successor of Cabades or Kobad. His father, whose reign was distracted by civil and religious commotions, as well as by a long war against the Byzantine empire, designated him as his successor in preference to his elder brothers, and, in order to strengthen his choice, called on the Greek emperor to adopt him. The strange proposal was accepted, and Chosroes departed for Constantinople; but a puerile disagreement caused a rupture, the return of the prince, and perhaps his eternal hatred to the Greeks. The last war of his father he terminated gloriously by a treaty of peace, in which Justinian promised to pay 10,000 lbs. of gold. Chosroes now regulated the internal affairs of his kingdom, particularly the administration of justice, suppressed with rigor the sect of the followers of Mazdac, whose communistic theories in regard to property and marriage had been a source of disturbance, and appointed 4 viziers to rule the 4 great divisions of the state, Assyria, Media, Persia, and Bactriana. He extended its limits to the Indus and Oxus, and compelled the nomadic tribes of the northern barbarians to repass the latter river. But his chief wars were those against the Romans. Viewing with concern the victories of Belisarius, the great general of Justinian, over the Vandals in Africa, he violated the truce and invaded Syria (540), plundered its cities, and took Antioch after a brave resistance. Belisarius, sent to defend the eastern provinces of the empire, was successful, but soon fell a victim to the intrigues of the court and was recalled, and Chosroes was again victorious. The war was continued for a series of years, chiefly in the districts east of the Black sea, and terminated by the peace of 562, in which the emperor bound himself to pay an annual tribute of 30,000 pieces of gold. This peace continued for 10 years; but the conquest of Yemen in southern Arabia by the lieutenants of Chosroes, who wrested it from the Abyssinians, the allies of the Byzantine empire, incited Justin, the new emperor, to collect a great army and recommence hostilities. He was defeated, and the Persians plundered Syria again. Tiberius obtained a truce of 3 years; this he employed in preparing a mighty army, and in the bloody battle fought near Melitene, in Cappadocia, the old Persian monarch was completely defeated (578). He died soon after, and was succeeded by Hormisdas, or Hormouz, IV., his son. The 48 years of Nushirvan's reign formed the golden age of modern Persia, in the history and poetry of the East. Dreaded by his enemies, he was revered and beloved by his subjects, who enjoyed the fruits of his victories, and admired his justice; easily forgiving those crimes which served to confirm his throne, such as the murder of his 2 elder brothers, and the extermination of their families and adherents. His government was firm, vigorous, and impartial; the administration of justice was watched most scrupulously and severely; the poor were the particular object of attention; orphans were educated at the public expense; the provinces were often visited by the monarch; the ancient religion of the Magi was respected; science and literature, trade and agriculture were zealously promoted; academies and libraries were founded, and enriched with the annals of the kingdom, as well as with translations from the Sanscrit, Greek, Latin, &c., among which the celebrated fables of Pilpay or Bidpay, expressly sent for to India, have become a literary monument even in the West. The wisdom of Nushirvan was admired by philosophers from Greece, and embassies were sent to him from Africa, India, China, and Thibet.—**Chosroes II.**, surnamed Parvis, grandson of the preceding, succeeded his father Hormisdas, who was de-

[illegible] from occupying the
[illegible], he fled to the Greek
[illegible] his assistance, re-
[illegible] defeated the usurper.
[illegible] he rewarded his aid by
[illegible]y, and the surrender of the
[illegible] of [illegible]sopotamia. His ally
[illegible] by Phocas (602), he
[illegible] ire with the osten-
[illegible]. A long
[illegible] the Asiatic prov-
[illegible] Greeks were devastated and con-
which was not interrupted by the
[illegible]cas, or by the supplications for peace
Antioch, Cæsarea in Cappadocia,
[illegible]stine, Egypt with Alexandria,
[illegible], were wrested in successive
[illegible] the new emperor; his cap-
[illegible] supplies from Egypt, was a
[illegible] threatened from the north
[illegible] savage Avars and other bar-
[illegible]ening to pass the Bosporus
[illegible]ntinople, Chosroes proposed
[illegible] of peace, which were re-
[illegible] the war recommenced.
[illegible], the pride and splendor of
[illegible]arch had now attained their
[illegible] of western Asia, he oppressed
[illegible] bitants of the Byzantine prov-
[illegible] with the spoils of the con-
[illegible] residence, Dastagerd, east
about [illegible] m. from Ctesiphon, the
[illegible]ous beauty and pomp have
[illegible] visitors and poets, and even
[illegible] of its paradise
[illegible] peacocks, os-
[illegible], and wild g[illegible]; of its lions
destined for the pleasures of the
the 960 elephants, 20,000 camels,
[illegible] horses, kept for the service of
[illegible] carry the royal tents; of the
[illegible] that watched before the gates; of
[illegible]ves and 3,000 women subjected
[illegible] passions; of the precious met-
[illegible], aromatics, in a hundred subter-
[illegible] of the palace; of its 30,000 hang-
[illegible] columns, and its cupola with 1,000
imitating the motions of the plan-
[illegible]constellations of the zodiac. While
[illegible] at his own power and glory, Chos-
[illegible]moned in a letter from Mecca to
[illegible]hammed the prophet of Allah.
[illegible] and rejected the proposal;
[illegible]hammed is said to have ex-
[illegible] will God tear his kingdom and
[illegible]ons." The first part of this
[illegible] fulfilled by the victories of
[illegible] in a series of brilliant campaigns
reconquered all the lost provinces
[illegible] repeatedly defeated Chosroes, ad-
[illegible] Tigris, and finally won the great
[illegible]veh; after which the pusillan-
[illegible] proud and obstinate monarch fled
[illegible]orite wife Sira, the Shirin of Per-
[illegible], and escaped the hands of his enemy
[illegible] murdered at the command of his son Siroes, after having witnessed the massacre of his numerous sons, and suffered the horrors of a dungeon (628). Chosroes II. was the last mighty king of the house of Sassan; his son enjoyed the fruits of his unnatural deed only for 8 months; and, after a few years of civil wars and disasters, Persia was conquered by the Arabs.

CHOTEK, FRANZ XAVIER, one of the most renowned teachers of music in Vienna, born at Liebisch in Moravia, Oct. 22, 1800, is the author of over 100 musical compositions. His best known work is his "Musical Anthology."

CHOUANS, a name given to the royalist peasantry of Brittany and Lower Maine, who, following the example of the Vendeans, rose in arms against the revolutionary government as early as 1791, and who often, under the pretence of waging war in the king's behalf, infested the roads, pillaged villages, and committed all sorts of depredations. The name was ultimately extended to all the insurgents in western France. The rebellion in Lower Maine had been prepared by a number of contraband salt makers, among whom 4 brothers, named Cottereau, were conspicuous. The taciturnity of their grandfather had given him the nickname of *Chat-huant* (screech-owl), or *Chouan* according to the Bas Breton dialect. This nickname had been transmitted to the grandsons, who were usually called the "brothers Chouan." Jean, the eldest and boldest of the 4, had once been sentenced to death, and having, through the entreaties of his mother, obtained his pardon from Louis XVI., had become a fervent royalist. The earliest companions of Jean Cottereau were a lame beggar surnamed *Jambe d'Argent* (Silver Leg), Tristan l'Hermite, Taillefer, Coquereau, and a few others. Their first encampment was established in an excavation in the woods of Misdon; and they began to appear in villages where revolutionary opinions prevailed, against detachments of troops and national guards. The *Chouannerie*, as these warlike bands were soon called, was not limited to a single province; from Lower Maine it extended through Brittany, where it gained a strong foothold, and thence eventually to Normandy. The Chouans received powerful accessions from the ranks of the peasants, driven to rebellion by heavy taxes, by persecution of their religion, or by fear of being enrolled in the army. The first serious outbreak in Brittany (Feb. 13, 1791) was occasioned by the attempted removal of the bishop of Vannes, who had refused to take the civil oath; the peasants of Sarzeau came forward to protect him, but were fired upon by troops of the line and national guards. Thenceforward Brittany was divided into 2 camps, the adherents and the opponents of the government. The military organization of the Chouans was gradually perfected, and they soon numbered no less than 100,000 volunteers, who were subsequently distributed into 5 distinct corps; but for the sake of efficiency, they generally moved in bands of 25, 50, and sometimes 100 men, acting independently, but according to a common direction. In 1793, under the name of the Little Vendée, the Chouans joined the great royalist army. On this occasion, it was proposed to invest one of the royalist generals with the command of the Chouans, but the reply was: "We have come with Jean Chouan, we know no one but him; we obey him through friendship; he must be our leader; if not, we will depart." Consequently Cottereau reassumed the command of his forces, which he kept until July 28, 1794, when he was killed in an encounter with republican troops. Tactics and regular evolutions were not in accordance with the instincts and habits of these partisan bands. Consequently, after the heavy loss experienced by the royalist army near Le Mans, and especially after their bloody defeat at Savenay, Dec. 27, 1794, the Chouans returned to their haunts, and resumed their guerrilla warfare. Detachments of troops overtaken or slaughtered, stage coaches arrested on the highway, receivers of public money carried off and tortured, depredations, pillage and assassination, such were their regular occupations. Terror spread over the country, their deeds being greatly exaggerated by common report, while many acts of bravery and magnanimity were overlooked. Their chiefs were powerless to prevent excesses. On the death of Cottereau, *Jambe d'Argent* had become one of their leaders; but the most popular was Georges Cadoudal, who had then taken up his abode in Lower Brittany, and waged unrelenting war against the republican troops. Some attempted to bring about a pacification by a treaty concluded at La Mabilais; but this was disdainfully rejected by Cadoudal, Frotté, and other influential Chouans. Even the great disaster of Quiberon, July 16, 1795, was unable to shake their power. The loss had indeed fallen on the *émigrés* and the English, while the royalist peasantry had suffered little. They not only kept in arms, but their chiefs tried to reënforce their organization and to bring about rebellion in several other provinces of France. Their efforts were in some measure successful, and would have been completely so if any prince of the Bourbon family had dared to land in Brittany, and put himself at the head of the movement. The count of Artois cruised indeed off the coast of France for a few days in Aug. 1795, and this alone was sufficient to give a new impulse to royalist ardor; but the disappointment caused by his sudden departure crushed the hopes of the most fervent. Some chiefs and several bands still persisted, but the great army of the Chouans dwindled away, disgusted at serving princes by whom they were sacrificed. The most obstinate joined the *émigrés* in several conspiracies. Cadoudal was arrested in 1804, and the Chouannerie may be said to have died with him.

CHOUGH (*coracia gracula*, Linn.), a bird of the crow family, sometimes called Cornish daw, and red-legged crow. It is a native of Europe, and is most numerous on the bold rocky shores of Cornwall, Devonshire, Wales, and the Hebrides islands; on the continent it prefers the Alpine regions. The plumage of the adult male and female is black, glossed with purplish blue and green; the legs, feet, and bill are red; the claws black, strong, and hooked; the bill is longer than the head, arched and tapering to an acute point; the wings are about the same length as the tail, which is even, with a small tip; on the head and neck the plumage is blended, and highly glossy. The length to the end of the tail is 17 inches; extent of wings 84 inches; tail 6½ inches; bill 2¼ inches; tarsus 2⅛ inches; the weight is about 14 oz. The female is somewhat less in size, and has a shorter bill. When seen at a distance, the chough resembles the rook, which it excels in elegance of form; near at hand, the red bill and feet readily distinguish it. It is gregarious like the rook and jackdaw, both of which it resembles in its note and mode of flying. Its food consists of insects, grubs, seeds, and the flesh of dead animals; it is particularly fond of grasshoppers and cockchafers, for which it searches fields and rocky places, walking like the rook. It is very shy, unless in the breeding season; its flight is high, irregular, and performed by slow motions. It breeds near the sea in rocks, caverns, and ruined towers; the nest is composed of sticks, and lined with wool and hair; the eggs are generally 5 in number, of a dull white color, with light brown and ash-colored spots, chiefly at the larger end. In confinement the chough becomes very tame and docile; it is very crafty, hiding its food, and frequently articles of value which it has stolen, and as the bird always selects elevated positions, it is often difficult to recover them. It eats little at a time, and regurgitates its food like ruminating quadrupeds; even when full fed, it will try to throw up a portion of its meal in order to take a little more. It is capable of very strong attachments and dislikes.

CHOULES, JOHN OVERTON, D.D., a clergyman of the Baptist denomination, born in Bristol, Eng., Feb. 5, 1801, died in New York, Jan. 5, 1856. His parents were members of the Wesleyan connection. After completing his school education, he became in 1822 a divinity student in the Baptist college at Bristol. He had been received as a member of the Broadmead Baptist church in Sept. 1819. Having completed his theological course, he left England for America in 1824. The first winter after his arrival in New York was spent in supplying various churches in that city and vicinity. In the spring of 1825 he became principal of an academy at Red Hook, N. Y., a post which he retained about 2 years. In Sept. 1827, he was ordained as pastor of the 2d Baptist church in Newport, R. I. After a successful pastorate of about 6 years, he resigned his charge in Newport, to accept the call of the 1st Baptist church in New Bedford, Mass. In 1837 he assumed the pastoral care of the Washington street church,

rhere he remained 4 years. In 1841 he
astor of the 6th street Baptist church,
c, and in 1843 of the Baptist church in
Plain, near Boston. In the latter part
ear 1847, Dr. Choules was induced to
ne pastoral care of the 2d church in
He was the author of 2 volumes of
ntitled respectively, "Young Amer-
ood," and "The Cruise of the North
eside these volumes, he completed the
as Smith's "History of Missions,"
s issued in 2 vols. 4to. in 1832; wrote a
on of Hinton's "History of the United
o the administration of President
dited an edition of Neal's "History
ritans;" also an edition of Forster's
en of the Commonwealth in Eng-
mes's "Church Members' Guide," and
her works.

s, or Chœus, a measure of liquids
e ancient Greeks, corresponding to
n *congius*, and containing about 6
It is probable that the same
s also given to a smaller measure
g nearly 2 pints English. It was, as
d, originally the usual name for a
up.

TEAU, Auguste and Pierre, two bro-
ers of the city of St. Louis, origi-
ew Orleans, who joined the expedi-
erre Ligueste Laclède, which left that
gust, 1763, under a commission of the
eneral of Louisiana, to establish the
in the region west of the Mississippi
bordering on the Missouri and its trib-
Auguste, the elder, was intrusted by
ith the command of the boat. They
e settlement of St. Genevieve in No-
being just 3 months ascending the
n New Orleans. In the winter they
point 61 m. above St. Genevieve, on
rn bank of the Mississippi, for their
post, and named this St. Louis. Au-
uteau was in charge of the party that
d operations here, Feb. 15, 1764.
of the brothers in his "Sketch of the
tory of St. Louis," Nicollet observes:
young men, who never afterward
e country of their adoption, became
e heads of numerous families, enjoy-
ghest respectability, the comforts of
bly acquired affluence, the fruit of
industry, and possessed of a name
this day (1842), after a lapse of 70
till a passport that commands safety
ality among all the Indian nations of
l States, north and west." Both were
men, and officers ranking as colonels
ly history of St. Louis. The elder
d in 1829. Pierre was an honored
e anniversary celebration of the set-
St. Louis in 1847, at the age of 89,
years afterward in that city.—Pierre
, jr., son of the last-named, born in
been during the present century a
erchant in the fur trade in St. Louis,
a principal member, or the head, of most of the successive companies formed for conducting this business. In 1834, with his associates, Messrs. B. Pratte and Cabanne, he purchased the interests of Mr. John Jacob Astor, which controlled the so-called American fur company; and in 1839 the organization was formed which still continues under the name of P. Chouteau, jr., and co. This house has since nearly monopolized the entire fur trade of the west and northwest in the territories of the United States east of the Rocky mountains. Mr. Chouteau has for some years resided in New York at the head of the branch of his house established in that city; and has contributed liberally by his wealth and influence to forward several of the great enterprises connected with the development of the resources of the country.

CHOWAN, a N. E. co. of N. C., bordering on Albemarle sound, bounded W. by Chowan river; area about 240 sq. m.; pop. in 1850, 6,721, of whom 3,673 were slaves. It was one of the original precincts of the lords proprietors under King Charles II., and was occupied by a tribe of Indians called Chowanokes, from whom its name is derived. The surface is slightly uneven, and the soil generally of good quality. The productions in 1850 were 295,227 bushels of corn, 88,135 of sweet potatoes, and 129 bales of cotton. Capital, Edenton.

CHRISM, in the Roman and Greek churches, ointment consecrated by the bishops, and used in the administration of baptism, confirmation, ordination, and extreme unction. There are two sorts of chrism used in the Roman church: one made of oil and balsam, which is used in baptism, confirmation, and in conferring orders; the other is composed only of oil, and is used in extreme unction. These are always blessed by the bishop on Maunday Thursday, and each priest is required to obtain a fresh supply, and burn the old oils. In the Greek church, beside the oil and the balsam, it is usual to employ 35 kinds of spices. The Maronites formerly used balsam, musk, conelle, incense, roses, and other substances.

CHRIST (Gr. χριστος, anointed), a title applied in the New Testament to Jesus, and derived from the ancient practice of consecration by anointing to the regal, prophetic, and sacerdotal offices. The practice is still preserved in the consecration of kings. The apostles designate Jesus by this official title much more frequently than by his historical name. The reverse is the practice of the evangelists. (See Jesus Christ.)

CHRIST, Pictures of. Among the early Christians, the aversion to the fine arts, as practised by pagan nations, was so great, that no pictorial representation of Jesus Christ was ventured upon, except symbolically through the signs of the lamb, the vine, and fish; the Greek term for fish, ιχθυς, constituting the initial letters of the following Greek sentence, significative of Christ's mission: Ιησους Χριστος Θεου 'Υιος Σωτηρ; thus establishing a monogram, which has acquired a sacred celebrity. The next artistic effort to commemorate the life of Christ is parabolical, namely, representing him as a shepherd among his flock, with a shepherd's flute; also in search of the lost sheep, or carrying it after having found it. In these representations, which abounded at the time, Christ appears with the ideal attributes of a youth; also in some instances in the maturity of manhood. Accounts have come down to us of pictures of Christ in the possession of King Abgar of Edessa, of St. Veronica, also of one ascribed to St. Luke; but these accounts are as little supported by historical evidence as the tradition of a miraculous picture at Berytus, and of a statue erected to his memory by the woman whom he had restored to health. The most ancient portrait of Christ was in the possession of the emperor Alexander Severus. In the *Museo Cristiano* of the Vatican is another picture of the Saviour, also dating from the 3d century, worked in antique mosaic, ascribed to a pagan artist, and representing the Saviour as a philosopher. Equally ancient portraits of Christ are found in the Calixtinian and Pontian catacombs near Rome, and are contained in Aringhi's *Roma subterranea nova.* Here Christ is represented with an oval face, straight nose, arched eyebrows, and high forehead. The expression is solemn, yet tender. The light brown hair, parted in front, descends in long curls upon the shoulders; the beard is rather short and unequal. A writer of the 8th century, John of Damascus, represents Jesus as having been of imposing presence, with bushy eyebrows, singularly beautiful eyes, regular nose, curling hair, black beard, yellow complexion, resembling the Virgin Mary, &c. A supposititious letter, purporting to have been written by Lentulus, Pilate's predecessor, to the Roman senate, also represents him as having possessed great personal beauty; but this letter is now known to have been written in the 14th century, and to have been based upon the portraits in the catacombs. The pictorial representations of the head of Christ, which made their first general appearance toward the end of the 4th century, and which served as types during the middle ages, were taken from the impressions traceable to these descriptions, and which, however conflicting in details, were all agreed in the general attributes of beauty in Christ's appearance. From the middle ages down to Michel Angelo and Raphael, we find the same original conception guiding the minds of artists. Raphael's "Christ in the Sepulchre" is the most beautiful picture of Christ extant. Titian also excels in this branch of sacred art; his head of Christ on the "Tribute Money" in the Dresden gallery is his best. Among subsequent artists, Ludovico Carracci's heads of Christ are full of expression.—See Grimm's "Tradition of the Origin of the Pictures of Christ" (Berlin, 1843).

CHRISTCHURCH, a parliamentary and municipal borough, town, and parish of the county of Hants, England; pop. of the parliamentary
borough in 1851, 7,475. It is 7 m. fr
Christchurch station on the Southampt
Dorchester branch of the Southwester
way, 107 m. from London, on the S. W.
of the New forest, at the confluence
Avon and Stour, about 1½ m. abov
mouth in Christchurch bay, an inlet
English channel. It derives its na
fine old church founded in early Sa
and rebuilt under William II. Chr
was the temporary residence of Louis P
in 1817. In Christchurch bay a dou
occurs every 12 hours.

CHRIST'S HOSPITAL, commonly cal
blue coat school, is one of the oldest an
famous of the charitable educational es
ments of London. It was founded in 1
the citizens assembling a number of poo
dren for education and maintenance. I
VI. favored the plan, and by charter
June 26, 1553, 10 days before his death
porated the 3 hospitals of Christ for p
therless children and foundlings, Bridew
St. Thomas the Apostle, vesting lands fo
support in the mayor, commonalty, a
zens. Five years afterward Christ's I
was opened, under the charter, in the b
in Newgate street belonging to the r
suppressed brotherhood of gray friars.
hundred children were entered. On ent
were clothed in russet, which was
quently changed to the costume the
wear, namely, a blue tunic reaching
feet, bright yellow petticoat and yellow
ings, red leathern girdle, clerical band
the neck, and a little round cap of black
len. Charles II. granted £1,000 for 7 y
found a mathematical school for 40 '
boys," and an annuity of £370 10s. to
others to sea; 14 additional pupils in
ematics were added on other foundation
writing school in 1694, by Sir John Moo
mayor. The course of study was g
augmented, until at present it embra
branches of a sound elementary educa
main establishment at London has 4
masters, 2 writing masters, and 2
ematical, drawing, and singing m
860 scholars. In 1683 a branch hosp
preparatory training was established a
ford, which now has a classical master,
ing master, 2 ushers, 2 female teachers
girls' department, 400 boys and 70 gi
domestic economy of the hospital is on
but comfortable scale, from which, he
many of the peculiarities of old times ha
recently disappeared. Formerly the
performed all the menial duties of the e
ment, but now they are required merely
their own beds. Until 1824 the boys
fasted on bread and beer, and till more
-ly ate from wooden trenchers and drew
beer from leathern blackjacks. Every
they visit the exchange and the lord
The "king's boys" were formerly prese
court once a year; and even now from

[illegible] Friday the hos- [illegible] to witness the [illegible] government of [illegible] in the aldermen of [illegible] of £500, of whom [illegible] Governors exercise of pre[illegible] to the hospital, and the p[illegible] of some ecclesiastical [illegible] The hosp[illegible] has long since ceased to [illegible]." pro[illegible] so called, most of the [illegible] children of freemen [illegible] of clergymen of the [illegible]. No [illegible] il is admitted under [illegible] he remain after 15, mathe- [illegible] olars excepted. The total [illegible] £58,075, the expenditures [illegible] buildings of the hospital [illegible] yed by the great fire in 1666, [illegible] under the direction of Sir [illegible] were [illegible]ired and [illegible] Excep[illegible] the new [illegible] the city, [illegible] not incon- [illegible] cal person- [illegible] are preserved in [illegible] t men edu- [illegible] the his- [illegible], Cole- [illegible] Lamb, [illegible]

[illegible] II., king of [illegible], surnamed [illegible]ry the Fiery, and [illegible] Sweden the [illegible] successor of K[illegible] John, born [illegible], died Jan. 24, 15[illegible]. Anecdotes are related of his infancy and youth. [illegible]s imperfe[illegible] habits be- [illegible]. At the [illegible] his father [illegible] and [illegible] of a rebellion [illegible] him the com- [illegible] however, King John placed him by [illegible]er the guidance of the bishop [illegible]n of gentle and humane char- [illegible] were they arrived in Norway [illegible] destroyed the bishop's commis- [illegible] him up in a dungeon, where he [illegible] Christian quelled the insurrection [illegible] equally summary. He nearly [illegible] Norwegian nobility, of whom the [illegible]ped fled to the mountains, and [illegible] to the grade of peasants. He [illegible] and sword across the border into [illegible]ring this expedition he met with [illegible] girl, originally from Holland, with [illegible] formed a connection which colored [illegible]re career. She was the daughter of [illegible] of a petty inn in Bergen, named [illegible]ms. The daughter, known only [illegible] "the Dove," was of wonderful gentleness. Upon the death of [illegible]1518), during whose reign the union [illegible] had been reëstablished, Christian [illegible]h proclaimed, after consenting to [illegible]n of the privileges of the [illegible] was crowned at Copenhagen and [illegible]w Christiania) in Norway. At the [illegible]her's coronation at Stockholm, Christian was recognised by the Swedes as successor to the Swedish throne; but in the mean time successful rebellion had again partly emancipated Sweden from the Danish yoke. Christian, being about to invade Sweden, obtained the hand of the princess Isabella, sister of Charles V., and the marriage was solemnised in Aug. 1515; but Christian still retained his mistress Duvika, whose mother, Sigbrit, had already achieved a complete ascendency over his mind. This extraordinary woman, whose early years had been spent in Amsterdam, was possessed of singular talents. Christian invested her with the administration of the customs revenue, and with the collection of the tolls at Elsinore. She diminished many duties and taxes in order to encourage exportation; and this measure, of serious injury to the Hanse towns, was the cause of their alliance at this juncture with Sweden. Sigbrit also brought about many restraints upon the nobles and clergy, especially in monopolies which they enjoyed. Laws were also made at her instance, limiting the privileges of foreigners, regulating weights and measures, &c. In the 4th year of Christian's reign, Duvika suddenly and mysteriously died. She was undoubtedly poisoned. Suspicion fell first upon members of the senate, who aimed to rid themselves of the influence exercised against them by Sigbrit; but afterward upon a young Dane, Sir Torben Oxe, the master of the royal household. The youth had fallen desperately in love with Duvika, and the tragedy followed, brought on probably by the despair of the guilty couple. A hundred lives of Sir Torben would not have satisfied the king. His rage seemed to have turned against all mankind. Murder, confiscation, unjust acts of every description were now the royal pastime; and Sigbrit's influence greatly increased. She surrounded the king with unworthy companions, among them, especially, her brother and a nephew, Diedrich Slaghöck, originally a barber, then a surgeon in Holland and Italy, and at length a priest. She revenged herself against the people of Elsinore, who came under her displeasure, by removing from their town to Copenhagen the collection of the sound tolls. Some of her measures, however, were of a much wiser character. Hearing, for instance, that the queen and her German ladies languished for the delicacies of her native land, and that her health would suffer under the rude fare of the Danes, she imported from Holland a colony of peasants, and established them upon an island in front of the capital. These industrious gardeners reclaimed the sterile soil, and ultimately taught the whole of Denmark the art of dairy farming and vegetable gardening. Meanwhile great preparation was made in Sweden to resist the Danish invasion. The Swedish administrator or regent, Stenon Sturé, had appointed Gustavus Trollé to the archbishopric of Upsal. The new primate, still young, had completed his religious studies at Rome, and on his way home had met at Lübeck a confidential agent of Christian, who had little difficulty in obtaining a promise to support the pretensions of the king. Christian found means also to gain over to his cause, at least in appearance, the papal legate; but that personage disclosed to the regent the projects of Christian, as well as the treason of Trollé and of certain commanders of fortresses corrupted by the Danes. The regent at once adopted vigorous measures. The governors of the fortresses, upon arrest, revealed the plot, which they said was directed by Trollé, who, disregarding a summons to appear before the diet, fortified himself in his castle. A Danish army, which had landed to relieve Trollé, was attacked by the regent and driven back. Sturé then forced the castle of the archbishop, compelled his abdication, sent him a prisoner to the monastery of Wodstena, and razed his castle to the ground. The pope heard this news with great displeasure, and Sweden was placed under interdict. The regent and his followers were excommunicated, and condemned to pay to Trollé 100,000 ducats, and to rebuild his castle. The execution of the bull was intrusted to Christian, who besieged Stockholm with a powerful fleet and army, but was beaten and driven off by Sturé. He next tried stratagem and treachery. Feigning a wish to treat, he obtained from the regent provisions for his fleet, and put in irons 6 Swedish nobles (among them was Gustavus Vasa), who had been sent to him as hostages during the truce. These, he sent word to Sturé, should be put to death unless Danish authority were immediately accepted. A brisk attack from the outwitted Swedes was their reply, but the wind setting fair, Christian weighed anchor and sailed with his prisoners to Copenhagen. Next year, Christian being in great want of money, seized a quantity of copper belonging to the papal legate which was about to pass the strait at Elsinore, and this, in addition to the payment by Charles V. of part of his sister's marriage portion, enabled him to resume his operations against the Swedes. Sigbrit had procured for him a great body of foreign auxiliaries, and the expedition was embarked in Jan. 1520. At the first battle, fought at Bogesand, the Swedish regent fell mortally wounded. The Danes advanced by forced marches between the lakes Wenner and Wetter, and reached the forest of Tiwed, the ancient rampart of northern Sweden. Here the peasants made a desperate stand against the invaders, who, however, outflanked the brave yeomen, cut them to pieces, and gained the high road to the capital. Everywhere along the route, in the villages and on the church doors, Christian published the papal ban against the regent and his adherents; and Archbishop Trollé, now in the camp of the Danes, proclaimed to the bewildered peasants that the death of the regent was a sign to them from God himself. A baronial diet, which had been convoked at Upsal, saw that resistance was hopeless, and entered into a convention with the Danes, that Christian, on condition of solemn promise of general amnesty, should be crowned king of Sweden. Thus the union of Calmar was once more established. Christian, who had remained at Copenhagen, signed the convention in that city on March 31, 1520. Stockholm and Calmar, the 2 great fortresses of Sweden, still held out against the invaders. These castles, by a singular coincidence, were defended each by a woman. The widow of the fallen regent, Christina Gyllenstierna, refused to accept the treaty, and aroused the burghers of Stockholm to a desperate resistance. Lübeck and Dantzic, dreading Christian's ascendency, promised her assistance; and the peasants from the neighboring farms, cursing the nobles, engaged to harass the enemy in the rear. Unhappily they had no leader. Gustavus Vasa was still absent. However, the heroic Christina held out for 4 months, when she was compelled to capitulate. Calmar shared the same fate, and in September Christian II. was everywhere acknowledged. He now resolved upon the extirpation of his enemies; and immediately after the capitulation of Stockholm, was guilty of deeds more bloody and treacherous, perhaps, than any others on record in Christian history. Instigated by his confessor, Slaghöck, the king, as executer of the papal bull, pretended that his promise of amnesty as king must not conflict with his duties as representative of the supreme pontiff. The coronation had been solemnized in the presence of the Swedish nobles and clergy, all of whom rendered homage formally. Festivities followed during the next 3 days, and then an ominous assembly was held in the great hall of the palace. Christina was summoned to hear her husband denounced and reviled by the creatures of the king. His surviving adherents among the nobles were at once declared and condemned as heretics. Heralds proclaimed the sentence, while the city gates were closed and guarded. Scaffolds and blocks arose during the night in the great square. The first head to fall was that of the venerable bishop of Strengnäs; immediately after him the bishop of Skara and 13 nobles, among whom was the father of Gustavus Vasa. For 2 whole days the butchery continued, and dead bodies lay in masses in the streets. The king paused at length to permit the corpses to be removed to an eminence outside of the city. Upon them he caused the remains of the regent and of his infant child to be flung; and then they were burned. While the flames arose, the widows and orphan daughters of the murdered men were abandoned to the soldiery. At length, Christian quitting Stockholm travelled through the country, marking every stage of his journey with blood and execution. Whole families were extirpated. Children of tenderest years were not spared. Gustavus Vasa had now escaped to his country, and reaching the borders of Dalecarlia, had aroused the peasants of that province. He issued from the northern provinces at the head of 20,000 men, and went on from victory to victory. Christian f the instant execu- was imprisoned with n, to lay down his arms; and deaths followed shortly dungeon. Christian meandefence of Sweden to his endid visit to his brother- Charles V., in the Nether- he arrears of his queen's dowry, in a quarrel with the duke of Hanse towns. He was received great magnificence, but ob- no satisfaction in his suit. His were everywhere distracted. olm, hard pressed by the demanded instant succor Vasa, but protested against whose cruelties began to his ster. Slaghöck, the king's while been made archbishop now arrived a papal nuncio tion of the deaths of prelates weden, whose offices were now f Christian's minions. The king appy confessor as the cause of Slaghöck was imprisoned, tor- uted at the stake, while the the king innocent of all sin. e, however, insisted upon the rollé: and about the same period , wise in themselves, but privileges of the aristocracy, fall of Christian. He published bade the sale of serfs. A ted property in wrecks: re by the waves had at property; but the barons this right, and now it was he waifs should be delivered to iffs, to be by them returned to the iners within the space of one is, the property was to be sold, ds to go to the king, and the the church. One year after the öck, Christian received myste- nnouncement of his impending taining a letter from a number was left in his tent during had taken the field against army invading Zealand and Scania. racy of Jutland clergy and nobles sed to him, and the letter con- on of allegiance. The t, having taken into con- ole career of cruelty and blood, for themselves the fate of the le, through the "influence of that rit," they disclaimed henceforth fealty to him, and were about crown to Frederic, duke of Hol- nce readily accepted the invita- was seized with a species of collecting the peasants, attached to his person by his favor, and who in this emergency al to him, he sent an envoy to the rebellious barons, acknowledging his errors, and praying them to accept again their repentant sovereign. His offers were rejected; he hurried in terror to Copenhagen, and wandered about the streets, imploring the people with tears and vows of amendment to save him from his enemies. The people, unaccustomed to see a weeping and begging king, were moved. Zealand and Scania swore allegiance anew, and he might yet have saved his crown. The weakness, however, which he continued to exhibit, cost him every trustworthy friend, and finally collecting some 20 ships he embarked with his family, carrying off the public records, the crown jewels, and all the treasures within his grasp. Sigbrit, who dared no longer show herself to the people, was carried on board secretly in a clothes chest. Himself, his wife, children, and a few faithful servants followed, and to the unspeakable astonishment of his subjects the fleet sailed from the harbor, bearing away their king, a fugitive and a deserter. This event, which occurred April 20, 1523, ended for ever the famous Calmar union, after a period of 126 years. In Denmark the flight of Christian was a serious calamity to the people. It was the triumph again of the barons, and a renewal of the bonds of serfdom. His municipal regulations, due to the woman Sigbrit, no doubt were excellent and original. Advocates were admitted to courts to plead the cause of the accused, and to appeal from the tribunals to the crown. He reformed and regulated the customs tariff and taxes. He established inns and post offices for the first time in Denmark. The poor of Denmark deplored the loss of the king who is known in history as a remorseless tyrant. On quitting the harbor of Copenhagen, Christian's fleet was dispersed by a violent storm. After having been nearly wrecked upon the coast of Norway, he at length reached Antwerp in safety. He found means to invade Holstein with 10,000 men, but was again compelled to flight. In 1531 he sailed again at the head of 12,000 men; his fleet was dispersed, but he landed in Norway, where the new king of Denmark, Frederic, was hated. The Norwegian bishops and nobles declared for his cause, and on Nov. 30, 1531, he was solemnly acknowledged king. The common danger, meanwhile, brought about peace between Frederic and Gustavus Vasa. A treaty for mutual defence was concluded, and a Swedish army entered Norway. Christian's fate was soon decided. His ships were burned, his troops mutinied from hunger and want, and he was forced to surrender himself to the Danish admiral, stipulating for a safe conduct to Denmark, in order that he might confer personally with his uncle King Frederic, to whom he would repair (to use his own words) "like the prodigal son;" if no amicable compromise of their differences should be arrived at, it was understood that he should be free to quit the kingdom. On his arrival, King Frederic was not permitted to ratify the agreement, but was compelled to declare that the admiral had exceeded his powers. So bitter was the hatred of the Danish nobles against their late king, that Frederic was obliged to give them a written assurance that Christian should be kept in perpetual imprisonment. The document containing the pledge was formally committed to the custody of 8 barons; and the condemned king entered upon 27 years of retribution. He was first conveyed to the castle of Sonderburg, in the island of Alsen. Here he was placed in a vaulted apartment of which all the windows were walled up, one little aperture near the ceiling alone excepted for air and light, and through which to receive his food. In this dismal dungeon, with a Norwegian dwarf who was given him for a companion, he passed 17 years, the first 12 without any alleviation whatever of his misery. A stone table still remains in the castle, around the edge of which the islanders at the present day point out to the traveller a line of indentation, worn, they say, by the hand of Christian, whose sole exercise and pastime in this narrow abode consisted in walking around the table, with his hand resting on the stone slab. Still another war was waged for his liberation, and shook Denmark to the centre; but it was decreed that he should die a prisoner. In 1544, at the intercession of the emperor his brother-in-law, the rigors of his imprisonment were somewhat mitigated; and at length, upon the renunciation of all his pretensions in 1549, he was removed to the castle of Kallundborg in Zealand, on the coast of the Great Belt, and made comfortable, with a fixed income, and with permission occasionally to hunt in the adjoining forest. But calamity had worked upon his brain, and attacks of despondency became of frequent occurrence. They were now also made violent by immoderate use of wine, and at Kallundborg his malady often assumed the character of insanity until he died. He had had 3 children. John, the eldest, was educated under Charles V., but died at Ratisbon on the day his father entered the dreadful vault at Sonderburg. A daughter, Dorothea, was married to the elector palatine, Frederic II.; and Christina, first to Francis Sforza, and subsequently to the duke of Lorraine. "In contemplating the character of Christian II.," says Geijer, the great historian of Sweden, "one knows not what most rivets the attention—his multiplied undertakings, his audacity, his feebleness, or that prolonged misery of years in which he expiated his short-lived and much abused tenure of power."

CHRISTIAN VII., king of Denmark, born Jan. 29, 1749, died March 12, 1808, was the son of Frederic V. and Louisa, daughter of George II. of England. He succeeded his father Jan. 14, 1766. He had previously made proposals of marriage to his cousin Caroline Matilda, sister of George III. of England, and the nuptials were solemnized soon after his accession to the throne. His young queen became immediately endeared to the people of Denmark, and was at first the object of her husband's strong affection. His nature, however, was trivial. He was narrow-minded, selfish, and inconstant. A year after his marriage he set out to travel abroad, leaving his young wife at home. He visited Holland, Germany, France, and England; being everywhere accepted as an affable and enlightened gentleman. His habits, however, had become riotous and dissipated, and although upon his return to Denmark (1769) he seemed to have profited by observation and experience, it was soon evident that the appearance of reform would be short-lived. He found the affairs of his kingdom deranged, the finances low, and commerce failing; but, incapable of attention to business, he abandoned the direction of his government to the hands of unworthy favorites. At first he appeared desirous of confiding chiefly in his late father's distinguished minister, Bernstorff, whom he accordingly raised to the dignity of count. A young noble by the name of Hölk at this time, however, enjoyed the greatest share of his confidence; together with a physician, Struensee, who had accompanied him in his travels. The queen, longing to recover her husband's affection, and regarding Hölk as her enemy, encouraged Struensee to supplant him in the royal confidence. The latter, the son of a German clergyman, was a man of insinuating address, with much tact and talent. By his aid the queen succeeded in recovering her husband's favor, and at length procured the banishment from court of Hölk and his equally obnoxious sister. Meantime the queen dowager, stepmother of the king (Juliana Maria, daughter of the duke of Brunswick-Wolfenbüttel), had begun to intrigue in behalf of the interests of her son, the king's half-brother; and upon the birth of a crown prince (afterward Frederic VI.) the breach between the queen and Juliana was hopelessly widened. This event, moreover, had not the effect upon the king which the young mother might well have counted upon. On the contrary, he gave daily proof of increasing folly and unworthiness. Bernstorff was dismissed; the council of state, the last surviving check upon the royal authority, was suppressed; and Struensee, possessing a greater ascendency over the king than any preceding favorite, ruled Denmark with an iron hand. He projected various plans of reform, however, and shook off the domineering influence of Russia, thus winning foreign respect for the country. He also economised expenditures; gave encouragement to art and industry; commenced the abolition of serfdom; and improved the general condition of the people. He was ennobled, and empowered to issue his master's verbal orders in writing without the royal signature; but his power was at length exercised imprudently. The nobles were already exasperated by his decrees against their privileges; and a law ordaining the liberty of the press, by which he hoped to gain greater

his enemies
and vilifying
Jan. 16, 1772,
dowager were
and the queen
ed from the
former be-
the
into exile. (See
queen dowager now
many years in the
mind sunk beneath
Disease brought
had early under-
further reign
son Frederic,
bles
in subvert-
power
dowager, and be-
sole
of Denmark. In
of Copenhagen by
was conveyed to
where he died.
VIII., king of Denmark, ne-
ng, born Sept. 18, 1786,
18
He officiated as governor
the treaty of peace of Kiel,
to Sweden, was repudiated
(Jan. 28, 1814). Christian
the champion of the national
bled an army of 12,000
at Eidswold (April 10,
constitution was signed (May 17),
d king of Norway under the
I. (May 29). But unable to
n against the claims of Swe-
supported by the allied powers
was compelled to conclude a
Aug. 14), and to relinquish the
own (Oct. 16, 1814). He now
to artistic and scientific re-
1832 was elected president of
n academy of fine arts. On the
ic VI. (Dec. 3, 1839), he ascend-
throne, and was crowned under
Christian VIII. (June 30, 1840).
h liberals, who had already yearned
Frederic VI. now became
a lil
constitution
of Schleswig-
king,
at first reluc-
eventually
a letter (July
which he de
red Schleswig and
indissolubly united with Den-
ous complications, however,
of this question, could not be
the king, who died shortly before the
of the revolution of Feb. 1848, and
throne by Frederic VII.
bishop of Mentz, born at
the 12th century, died 1183,
ed for
military exploits under
whom he opened the
On May 30, 1167, he de-
with a small band of 1,000 Germans a
erior Roman force, near Tusculum, and
vita Vecchia. After the coronation of
r at Rome, Aug. 1 of the same year,
Archbishop Christian's task was to subdue Tuscany and the Romagna. The town of Pisa, which rebelled against his authority, was deprived by him of all its privileges and excommunicated. At the beginning of 1174 he besieged Ancona by land, while the Venetians blockaded it by sea. Peace was established between the emperor and the pope, Aug. 1, 1177; but the archbishop, carried away by his desire to subdue the only party which still held out against the emperor, and which had its headquarters at Viterbo, fell into the hands of the leader of that party, Conrad of Montferrat, who detained the gallant prelate in the prisons of Aquapendente until 1181, when he was ransomed. Hardly had he recovered his liberty when he again took up the sword, and fell in battle while endeavoring to rescue Pope Lucius III. from the attacks of the hostile Roman armies.

CHRISTIAN KARL FRIEDRICH AUGUST, duke of Schleswig-Holstein Sonderburg Augustenburg. See AUGUSTENBURG.

CHRISTIAN. I. A co. of Kentucky, area 704 sq. m.; pop. in 1850, 19,580, of whom 8,140 were slaves. It borders on Tennessee, and is watered by a number of small streams, several of which flow for 2 or 3 m. of their course through subterranean channels. The soil in the southern and level part of the county is very productive. The northern part is hilly, and its wealth consists chiefly in forests of good timber and valuable mines of coal and iron. In 1850 the agricultural productions amounted to 1,235,290 bushels of corn, 45,678 of wheat, 329,152 of oats, 6,312,076 lbs. of tobacco, 37,892 of wool, and 24,661 of flax. The quantity of tobacco was the greatest produced in any county of the state. Organized in 1796, and named in honor of Col. William Christian, an officer of the revolution. Capital, Hopkinsville. II. A central co. of Illinois, bounded N. by Sangamon river, and intersected by the S. fork of that stream; area 675 sq. m.; pop. in 1855, 7,041. It has a generally level surface, diversified by timber lands and fertile prairies. The productions in 1850 were 594,475 bushels of Indian corn, 17,295 of wheat, 50,700 of oats, 1,008 tons of hay, 9,948 lbs. of wool, and 64,980 of butter. There were 8 grist mills, 7 saw mills, 1 tannery, 10 churches, and 592 pupils attending public schools. The Illinois Central and the Terre Haute and Alton railroads intersect the county. Capital, Taylorsville.

CHRISTIANIA, a city of Norway, a seaport, the modern capital of the kingdom, and the capital of the province of the same name; pop. of the province, in 1855, 643,135, and of the city 38,958; lat. 59° 55′ 20″ N., long. 10° 48″ 45′ E. The city is beautifully situated at the head of the fiord of the same name, an arm of the Skager Rack, extending inland about 75 m. The streets are broad, the houses chiefly of brick stuccoed. The new palace, Oscar's hall, occupying a fine site a short distance beyond the city limits, has been completed during the present reign. The university was founded in 1811. The number of students is between 700 and 800. The library contains 120,000 volumes; and there are museums belonging to the institution, of mineralogy, zoology, northern antiquities, and botany. There is also an observatory. There are 197 stationary schools in the province of Christiania, beside high schools, a school of drawing for workmen, and a normal school for teachers. There are also several learned societies; commercial, naval, and military schools; an art union, and gallery of paintings of native artists; a national gallery with several treasures of art, and a theatre. Among the principal public buildings are a cathedral, 4 churches, a council house, exchange, military hospital, and 2 orphan asylums. The new lunatic asylum occupies a large building, and is arranged on the best modern principles. Among the charitable institutions is one for vagrant and homeless girls called the Eugenia institute. At the southern extremity of the town, occupying a slight elevation, and commanding the harbor, is the ancient castle of Aggerhuus. It is a species of citadel, in which are preserved certain national records and treasure. The ramparts have been converted since the peace of 1815 into public promenades and gardens. They were formerly strong military works; and the castle, founded in 1302, has withstood several severe sieges. The antiquity of the castle is about 300 years less than that of the city. Opslo, as the city was originally called, was founded in 1058 by King Harald Hardrada, and upon the union of Norway with Denmark (1387) became the capital. In 1589 James VI. of Scotland (afterward James I. of England) espoused the princess Anne of Denmark in this capital. In 1624 it was destroyed by fire, and the new city, with the new name, rose upon the ruins. It was not, however, until after Norway had been erected into an independent kingdom by its brave inhabitants in 1814 that the modern capital began to make rapid strides in wealth and importance. Its population has increased more than 50 per cent. in 20 years; and from the conveniences of a good commodious harbor, trade has increased more than proportionally. In 1853, 788 vessels, measuring 58,196 tons, entered, and 647 vessels of 58,314 tons cleared, in foreign trade chiefly. The principal exports are timber, planks, iron, and glass. The manufactures, inconsiderable, are of glass, woollens, cordage, tobacco, cotton, and hardware. A new manufactory of corks was established in 1855, which produces daily 30,000 to 40,000 corks. The inhabitants claim to have shown a degree of enterprise surpassing that of the capital of the sister kingdom, the people of which began to light their streets with gas (1851) and to build railways (1856) several years later than the Norwegians. A railway from Christiania to the lake Mjösen, bringing some of the most populous and productive parts of the interior into direct intercourse with the sea, has been in operation since 1849, and an electric telegraph communication with London since June, 1854.—The oldest Norwegian newspaper is the *Christiania Intelligentssedler*, founded in 1763. The *Constitutionelle* is the organ of the government, founded in 1836, and united in 1847 with the *Norske Rigstidende*, which was established in 1815. The *Morgenblad* dates from 1819, and is a journal of the popular party. The *Christiania Posten* was established in 1848. The best literary periodical is the *Norsk Tidskrift for Widenskab og Literatur*, which dates from 1847.

CHRISTIANITY, that system of religion of which Christ is the founder. What was accomplished by his spirit through the apostles and others is to be referred to him no less than that which was performed by his own direct agency. Viewed in the light of its immediate cause, it was the infinite love of God, embodying itself in Christ and working out redemption for men. Considered as an act making provision for the restoration of men, it was the manifestation of a divine and perfect being in human flesh, a condescension to our condition in order to exhibit a life of sinless perfection and of complete self-sacrifice, as the means of liberating from the power and curse of sin all who should willingly enter into his spirit and adopt his principles of action. In its essential nature, it is neither a system of doctrines, nor a collection of historical facts, nor a code of morals, nor a body of religious observances. It is all this and much more. It is a new-born heavenly life, emanating from Christ, conformed to his example and to all truth, embracing all virtue, intimately blended with nature and history, and manifesting itself in acts of homage to God and of love to men. The germ of all its positive principles was contained in the person, character, and life of Christ. The complete development of this, and its application to all the relations of life, would constitute practical Christianity as it was designed to be, and as it will be when it shall be conformed to its ideal standard. Christianity in such a sense reveals itself in every phase of humanity, whether individual or social. It reaches further and comprehends more than the church. The latter does not embrace the state, but is rather its counterpart. The church and the state represent two aspects of human life, the religious and the secular. Christianity relates equally to both. The state is to be Christian, but not ecclesiastical. Philosophy, science, literature, art, business, private and social life, are all to be Christian, but surely not ecclesiastical. Indeed, if the individual is to be like Christ, inwardly as well as outwardly; if in him a divine principle is to pervade all that is human; if by the grace of God Divinity and humanity are to be in contact with each other in him, it cannot be otherwise than that Christianity shall extend equally to every thing in human [illegible] Every day is, in a certain sense, a holy [illegible] and every act is a Christian [illegible] will be the kingdom of God, such [illegible] nplete triumph. But while the church state are to be equally Christian, the n of Christianity is to be the direct he one, while it is to be only the in- m of the other. The activity of the herefore, being more directly religious ted only under religious forms, is often urally supposed to be a complete and representation of Christianity. It is this that many writers have errone- think, considered Christianity and the dentical. Christianity in a subjective inward life of the individual, an- the provisions of the gospel made and existing out of him. It is a per- se act of appropriation made under influence, by which Christ is received, tire character and spirit, in his offices, is work, as our redeemer, teacher, and . in short, as our life. This act nciation and abandonment of pposed to the spirit of Christ, and rrow for all previous participation is the negative side of Christianity; er hand, confidence in God as a iful Father, and trust in Christ of God's redeeming love to men, positive side. Supreme love to dical principle of Christianity, as of t heart; and love to men, not nt, but as a practical energy n self-denying and self-sacri- their good, in the spirit and ple of Christ, is the necessary and duct of that principle. Hence, in of personal religion, he who is with- is nothing. This inward spiritual d from Christ may not be perfectly nd wholly conformed to his at any oment of our present existence; but it ed in its seminal principles as soon as eived, and the development will go reaches perfection in the world to The progress of the individual in this fe is in proportion to the will and the he gives to it. While on the one nity is a gift and a grace, on culture and a work. The be- is not a passive recipient of his t a voluntary, resolute, strenuous determined, moral hero, who over- ifficulties and obstacles because he l and endeavored to overcome them. elps his disciples when they help them- nd lives in them when they strive to him.—As Christianity is founded on t will be necessary to delineate those res of his character which are l to it. The one fact on which all s in the redemption of mankind de- ut of "God manifest in the flesh." d was in Christ, and was represented is a fundamental principle in the Chris- n, as explained by Christ himself apostles. The incarnation laid the or human redemption. There was thus a second Adam, a new head of the human race—the true man, having a divine lineage, and the spirit of God without measure, bearing his image and doing all his will, acting in every moment of life with a perfect spontaneousness and freedom, leading a life at once divine and human, avoiding sin and thus passing sentence against it, taking upon him its outward consequences by putting himself in fellowship with the sufferings of sinful men, and in this state of voluntary humiliation and suffering revealing the infinite condescension and love of God to his erring and unhappy offspring. In all this act of redeeming mercy is to be seen the true type of practical Christianity; a holiness that is separate from sin and condemnatory of it; a humility that is unambitious and unpretending, seeking merit and not rank; and a love that seeks not its own, but sacrifices all external things for the good of others. The mystery of redemption by Christ we may not be able to explain; but that a whole embryo Christianity lies concealed in the wonderful life and death of the incarnate Son of God is too evident to admit of doubt. It is the taking of human beings up into fellowship with his human nature, as well as his descending to them by entering their nature, and holding communion with their sufferings, that opens the way for God to dwell in men, and for men to dwell in God. The divine and the human were first harmonized and reconciled in the person of Christ, and from him as a nucleus spreads out, by means of his spirit, a broader harmony and reconciliation between God and all his children. Such love and such a sacrifice on the one part, and such a reception of Christ and of his divine life on the other, render the method of redemption consistent both with the divine government and with the moral constitution of man. The righteousness of Christ which is accepted of God, is also accepted on the part of man, as the germ of a new life. In this way every end of a wise government is secured, and man is restored first to the image and then to the peculiar friendship of God. There is one feature of this system that needs to be more fully set forth. It is that view of Christ which presents him as the ideal of humanity. The want of such an ideal of human perfection was deeply felt by the ancient world. To the question, what precisely should men strive to be, no satisfactory reply could be given. Men were far from being agreed in respect to "the chief good;" and in the various theories maintained there was necessarily much vagueness, as nothing but abstract ideas could be presented, a living model of moral perfection being neither actual nor possible. Even if there could have been a perfect agreement about an ideal existing only in thought, it would have had but little power upon the common mind. It could not have been sufficiently definite and clear for practical purposes. What, therefore, was necessary to constitute a perfect man no one could positively

affirm. Certainly, there was in all the speculations of the philosophers no approach to the Christian idea of what man should be. There was in this circumstance a sort of necessity that the idea should be embodied in an individual person of the human species; otherwise it could never be fixed definitely in the general mind as the end of all its practical aims. Had Christianity done nothing more than to exhibit such a human character as that of Christ, still in presenting to the comprehension of all that living image of what human nature should be, it would have accomplished more in the way of teaching virtue than all the other moral systems of the world. All that can be done by the power of an idea has been done by the mere existence of such a person as Christ. The moral character of all Christian nations is precisely what their various attempts to attain to the excellence of this model have made it. No individual has equalled the normal type of humanity; nor has the whole school of his disciples collectively attained to the virtues of its founder. What other example is there in the history of mankind where the single founder of a school has been able to hold such a preëminence over the collective attainments of all his various disciples for successive ages? If human nature was designed, not for a separate and independent existence, but for an existence in most intimate connection with Divinity; if it was to be enlightened, guided, influenced, and moulded by the latter, by having a vital and uninterrupted spiritual union with it, and finding its true destination and well-being only in that state, a life not only from God, but in God, then there is nothing that exemplifies all this in such absolute perfection as the life of Jesus. Here we behold "the Model Man" in his union with God—"I in them, and thou in me." If Christ, beside all his other redeeming acts, has, in his life as a man, exhibited the just relations between humanity and Divinity by keeping them always in union and harmony, he has made this grand, this most marvellous exhibition for the benefit of human nature at large; and having been accomplished once, it needs not to be repeated. In respect to the fitting time or place for such an exhibition, it may not be becoming for mortals to attempt to judge. But, as we have the divine method before us, it is neither irreverent nor presumptuous to search for the evidences of its wisdom. If it is an event to occur but once, it would seem natural that it should take place in some focal point of the world's history. That it should succeed a period of the highest pagan culture, so as to show what mere human culture could not do; and should make its appearance in a nation the most favored in respect to religious knowledge, so that the heavenly plant might be put into a prepared soil, the most perfect revelation of God be made to those who already knew most of God, would seem to be both reasonable and appropriate. In this way, it would take up the great problem
of the destination of human
human society in that stage of its
the world under the most favor
stances, as it respects both pagans
had left it. No doubt, as the weste
of Asia, where the three tides of
and European civilization met, pre
able theatre for the introduction of Cl
so the period that closed ancient hi
opened the way for a new and very di
tory in ages to come, may be suppos
largely into that assemblage of circ
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and in different ages of the world.
greatest peculiarity, viewed as a pr
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causal relation to ours. He must h
divine life in himself, and have been
of a similar life in his followers. Othe
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institutions, of organizations; or, un
cal forms, they present symbols of w
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torical personage, holds the relation
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Even what Moses was in himself was
ter of vital importance; little com
depended on that. He was not in hi
son the standard of what he taught;
was his spirit the source of religion.
good men, he pointed to something
better than himself. But Christ was
that he wished his disciples to be; and
duction of himself in them individuall
itual energy was the chief aim of his re
his success in this undertaking is its c
—From this conception of Christianit
founder, which may be regarded as a
view, let us advance to a historical e
the exalted character of Christ. In
did he view himself, and in what a
he present himself to the world?
alted personage in whom were fulfill
predictions of the ancient prophets
to the Messiah; and in whom was
a substantial and perfect form all
shadowed forth in the types of th
ritual and law. He regarded hims
great deliverer of his nation, toward
previous history had pointed. For
generation of men to whom he ap
professed to be more important than
others. Their moral character was to
and their final state decided, by the re
rejection of himself as their spiritual
Saviour. Nay, more, for all men, and
of the world, this preëminence both
torical and moral point of view
the same. He claimed, in short,

individual on whom the well-being of all men depended. This is certainly a unique position to be assumed by any individual of the human race. If true, there is nothing in history that approaches it in sublimity and importance. How many correspondences does this suppose between himself and a broad sweep of historical events stretching from age to age! If such is his real character, it must be the key to the whole moral and religious history of mankind. Every new century must, with its train of coincidences, confirm the marvellous view. That he actually entertained such a view of himself does not admit of a doubt. The whole history of the apostolic age would be an enigma on any other supposition. The Jews often accused him of it during his public ministry. The general idea, under a great variety of forms, is exhibited by Christ in his public discourses, as reported by the evangelists. The whole structure and argument of most of the epistles presuppose it. The primitive church itself was organized on this as a fundamental principle. What, now, was the effect produced upon society by the appearance of Christ as such a historical character? The first thing which arrests our attention is the stupendous power which he exerted upon the minds of all classes of people with whom he came in contact. With whatever feelings his enemies approached him, they always stood in fear, and often in awe of him, after having encountered him. After many attempts by means of argument to strip him of his influence with the people, they clearly saw that nothing but physical force could overcome him. They crucified him because it was not safe for them that he should live. What mortal ever addressed the people with such convincing power as he! We admire the teachings of Socrates as represented by Plato; but what are they compared to the conversations and discourses of Christ as reported by John? We may think that Socrates owes somewhat of his celebrity to the splendor of Plato's genius. We will not deny that it was well that there was such a disciple as John, one so happily fitted to receive and record the peculiar spirit of Christ's teachings. But to suppose that Christ is indebted to John for the loftiness, purity, and simple majesty of his instructions, is only to transfer the marvellous power to another person. It would only make John superior to Christ, which would be not only more unhistorical, but more enigmatical in all respects than the contrary view. Still more striking was the moral influence of Jesus upon the men whose distinctive character as Christians was formed by him. What were Peter, John, and Paul, as he found them? And what were they as he left them? Think of the rough and dashing Peter as first seen on the sea of Galilee. How subdued and chastened, when the risen Lord said to him: "Feed my sheep." With what power and wisdom does he stand up before the multitude on the day of Pentecost! With what moral elevation, dignity, and completeness of character does he appear at the healing of the lame man at the entrance of the temple! With what respect, veneration, and awe must he have been regarded at the scene of the death of Ananias and Sapphira. Who can read his first epistle, addressed to the dispersed of Israel, without feeling that the touching power of his eloquence came from a soul that had received something beyond what the ordinary experience of life had given it? The transformation of his character is certainly surprisingly great. In tracing the change wrought in the character of John, we have similar evidence of the operation of a superhuman power. At the beginning he is a fiery, ambitious youth, calling for vengeance upon those who teach differently from his Master, and seeking for a position of rank and honor in Christ's future kingdom. After his long and peculiar intimacy with Jesus, how strangely does he appear to be changed into the same image. Was it not the spirit of his Lord and Master that changed him? Would his natural genius, without any extraordinary influence, have enabled him to write such an angelic gospel as that which bears his name? Who but Jesus of Nazareth made of the misguided, frantic, persecuting Saul the most splendid human character, perhaps, that adorns the history of mankind? Before his conversion it cannot be said that he had such a moral preëminence above other men. Without such a conversion, without the influence of Christianity, though he might have been a man of great natural power, there is no reason to suppose that he would have approached that character which the new religion gave him, and which made him the moral hero of his age. We may safely challenge all the heathen world to present two such men as John and Paul, or a single book of such moral sublimity and beauty as the gospel of the former, or any writings of such religious depth, compass, and power as the epistles of the latter. We have selected these single individuals for the sake of giving a microscopic view, as it were, of the spiritual power of Jesus over the minds and characters of men. If our space allowed us to extend the examination to hundreds and thousands of other individuals, we should find in them as genuine, if not as brilliant, specimens of high moral excellence produced by the power of Christ. What communities ever presented such a spectacle of sublime moral action and endurance as the primitive apostolic churches? All the Christian heroes that have lighted up the darker history of many centuries have only renewed the martyr spirit which was exhibited first by Christ on the cross, and then by countless other bleeding victims nobly offered up to God in the golden age of the church. These are only a few of many facts which have a veritable and incontestable place in history, and there is no other satisfactory explanation of them than that of referring them to the mysterious power which Christ exerts upon the minds of men.—If it be objected that the facts on which we rely in construing Christianity are

themselves dependent on the authority of the New Testament as an inspired volume, and that this is an undue assumption in a historical argument, we say in reply that we make no such assumption. We take the New Testament writings in this case for just what they are found to be worth as historical documents. Waiving all discussion in respect to their inspiration, we have good reason to say that the epistles of Paul, the writings of Luke, and the Gospel of John have passed the ordeal of the severest historical criticism, and that Strauss himself, the most destructive of all the biblical critics, while he fluctuates in regard to the last, admits substantially the historical authority of the two former. Let the writings of these three authors be tried by the same rules as those applied to other historical documents, and we think the credibility of their main facts will be called in question by no well-informed and sober-minded critic. Their inspiration is not their only title to being received as historical authority. Even occasional errors and discrepancies would not necessarily destroy their authority, any more than those found in Plato and Xenophon destroy the credibility of these writers in their accounts of Socrates. If it be conceded, as it generally is, that the New Testament writings above named, whether inspired or not, are in the main genuine sources of historical information, then the view which we present of Christianity is a strictly historical view, and has a place in the history of the world as much as the expeditions of Hannibal or Alexander.—With this explanation, we proceed. In respect to the method which Christ pursued in beginning the work of the conversion of mankind, we observe something like the following. On entering upon his public ministry, his first aim was to impart his own temper and spirit to a few others, scattering at the same time the seeds of truth among the people. He began by effecting what others before him had failed to do, by improving the human heart, and by allying it to himself in the bonds of holy affection. His instructions and his acts were means to this end. Among John's disciples, plain and simple-hearted fishermen, he found those who were most susceptible of pure spiritual ideas and spiritual impressions. By gradually forming their hearts to true piety and virtue, by unfolding to them the nature of his spiritual kingdom, by removing their ignorance, by correcting their misapprehensions, by overcoming their prejudices, by elevating them into his own region of moral purity, simplicity, and truth, by training them to meekness and humility, and at the same time to the most exalted moral heroism, to a supreme regard to the will of their heavenly Father, and to an unlimited confidence in him and contempt of the world, the Divine Teacher moulded the character of his disciples till it resembled his own, and prepared them to propagate the same spirit and principles in all the world. The apostolic office was not arbitrarily conferred, but was given to those who had been sedulously trained for it. His public ministry was as remarkable in its character as was his private training of the Twelve. While he was chiefly concerned with the profoundest truths, and the most comprehensive and far-reaching principles, his manner of teaching was inimitably natural and simple, growing out of the incidents and occurrences of life, or called forth by questions arising from them. Whether the matter was more sublime and weighty, or the manner more easy and simple, it were difficult to say. And yet most of his teaching was preparatory to something more complete which was to follow. Prejudices and errors which hung like a cloud upon the mind were broken in upon by degrees, as the darkness of night is by
proaching morning. Important moral
were stated in their most elementary prin
in a living, natural, concrete form. Unw
truths, relative to his own future authori
greatness, were more or less veiled in
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clear light. Facts not yet known, or eve
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the proper time should arrive. The c
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things plain. Till then, no small part of
teaching was necessarily obscure. His p
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individual men, but more especially to
the public mind for the days of I
for what followed. Never was a p
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introductory to the ministry of the ap
teachings were morally the leaven of
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ciety.—Let us now take our stand
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of him whose glory they saw as t
only begotten Son of God, full of g
truth, was still fresh in their minds.
cles, such signal manifestations of divine
and love, had not faded from their
markable discourses, as repeated by
made the multitude exclaim, "New
like this man," were treasured up as a
legacy in their hearts. The scene of
figuration, with its obscure symbolica
had not passed from their memories.
sayings, enigmatically expressed before
titude, but confidentially explained to
ciples, respecting his decease and the glor
should follow his resurrection, were
a complete elucidation by a series of
astonishing facts. Why were the d
dispersed disciples now assembled
buoyant with hope, and burning w
zeal? Had not something occurred to p
this change? Could the scene of the Pe
have opened if the resurrection had not
vened between that and the crucifixion?
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[illegible] doctrines founded upon them
l both these being abandoned,
of a historical Christianity, the most potent moral agency in the world, remains without an explanation. It would seem that, in an age so imbedded in false views of morals and religion, with a literature, philosophy, art, and government so alienated from the truth, and a life so given over to sensuality and gross immorality, there was need that a nascent Christianity should have a fresh, vital beginning; that, wanting a history and the demonstration of its moral tendencies from the trial of centuries, and all that accumulation of evidence which time has now given, it should be ushered in with a special divine energy, and be advanced by means of extraordinary gifts and aids. Gushing thus as from an overflowing fountain, the stream, which is now spread out into an expanded even volume, might, in its narrower compass, form a deep boiling current, as if rushing from a mighty cataract. As with the individual the first stage of a religious life may be accompanied with feelings intensely fervid, and with an enthusiasm and zeal which are then necessary to surmount great discouragements and obstacles, so Christianity as a whole might properly have a concentration and intensity of power at the outset, for which the far wider though gentler influences of later ages are a sufficient compensation. If the primitive Christians had some aids and evidences which we have not, we have very many which they had not. It was not, however, merely the extraordinary gifts of the apostles and the extraordinary events connected with their ministry that caused the dissemination of the Christian faith. What arrested equal attention and produced equal effect was the character of the professors of the new religion. The purity of their lives, their strict integrity, their firm adherence to the loftiest principles of morality, their disregard of consequences when urged to violate their conscience or their religious vows; their patience under injuries, their forgiving spirit, their magnanimity, their love to each other and even to their enemies, and their benevolent, self-renouncing, and self-denying spirit, made it impossible for the ingenuous among the heathen to withhold their admiration. The Christian life, in contrast with heathenism, was one standing miracle. Christianity itself contained nothing more wonderful or more convincing to its adversaries than the Christlike spirit of its adherents. Though they were all imperfect, and though some of them fell into errors and into sins, yet we learn not only from the apostolic writings, but from the testimony of pagans, that their attachment to truth, and to the purest principles of morality, and to all the virtues of a truly Christian walk, was such as to present the most striking contrast to what was observed among other people. Connected with this moral devotion of spirit was the earnestness with which every disciple espoused the Christian cause. Every one was a propagandist. That religion which was all things to them, they wished to communicate to others. They saw men living without God

in the world. The same compassion which moved Christ to devote his life to the salvation of men, prompted his followers to render that salvation as availing to all their fellowmen as possible. Wherever a Christian went, Christ was preached, and the faith was propagated. A Christian captive was sometimes the means of converting whole communities and nations. The spirit of its founder animated the church, and conversions from idolatry were rapidly multiplied. The age of Christ and of his apostles is the turning point in the world's history. There is no other epoch of equal importance in itself or of equal influence upon mankind. If we ask what has made the moral history of the world gradually improve from that date, no cause so powerful can be named as Christianity. As the industry of man has given a new face to nature, so the spirit of Jesus Christ has given a new aspect to human society. Its influence is so all-pervading that it is difficult to specify particulars. It new models the individual morally, and elevates him intellectually. It acts upon the family in modifying and ennobling all its relations. The wife and mother is exalted to a nobler sphere, and her position of newly acquired honor enables her to shed a most benign influence upon the family and upon society. The husband and father is a priest in his household, and has more sacred feelings of humanity and tenderness to those whose happiness and fortunes are placed at his disposal. The child, first secured against infanticide, then elevated as a moral being, and educated to Christian virtue, makes the love and respect of parents a part of his religion. And so the whole domestic relation is improved and sanctified by the example and teachings of Jesus. That exaltation of nature which blesses the individual and the family reaches also the state, and teaches it to respect the rights and to seek the well-being of the individual. It no longer makes itself the end and men the means, as in ancient pagan times, but is itself a minister to man as a social being. It recognizes the rights of other nations, regards itself as an instrument for promoting the interests of mankind, and acknowledges a higher aim than its own selfish purposes. Though the state is the last to feel the direct power of Christianity, it is beginning to consider itself commissioned by the genius of Christianity to do something noble as well as just for the whole brotherhood of man.—It remains for us to sketch the working of Christianity from the time of its establishment to the present. This is not the place to give the details of ecclesiastical history; and yet the influence of Christianity upon the world cannot be portrayed without involving what is most spiritual and vital in the history of the church. It will be convenient to divide the Christian age into three periods: the early period, when the church was oppressed and persecuted, reaching to the time of Constantine; the mediæval period, when the church was recognized as catholic, and was for the most part dominant; and the Protestant period, during which Christendom has been divided into two great parties, and the authority of the church over the state has been greatly diminished. Though the 2d period has a duration about four times as great as either of the others, in their relative historical importance they stand nearly on a level with each other.—*The first period* extends to the year 311. At the time the apostles were zealously propagating the faith, the age of classic antiquity was nearly gone by. Neither Greece with its individuality, liberty, and intelligence, nor Rome with its stern rule and power of conquest, had furnished any thing which could perpetuate social progress and preserve nations from decay. Unless a more potent conservative element could be thrown into society, the prospect was that all nations would share the fate of the great monarchies of the East, every period of great civilization being followed by a relapse into barbarism. Judaism, which was never designed to be universal or perpetual, had done its work, and was already effete. It was easy to see, within a very short time, that if there were any regenerative power which could arrest the tendency to decay, it must be found in the inspiring youthful enthusiasm of the new religion. Instead of the prevailing scepticism, the Christian had a positive faith. Instead of limiting his views to a mere earthly existence, and living after none but selfish principles, he lived for another world, and after another's will. His character and life were hereby ennobled. He knew the worth of the human soul, and would not violate its obligations nor jeopard its interests to please men. He had the loftiest style of character, and was capable of the highest and most difficult virtues. Herein lay the vigor of the Christian cause; and the want of all these things made the whole fabric of the Roman empire but a hollow shell. Hence in the protracted struggle of three centuries between paganism and Christianity, the one was continually sinking while the other was steadily rising. The class of men of whose existence in any political relations Trajan needed to be informed, gave character to the whole empire under Constantine. Within ⅓ of a century after the death of all the apostles except John, that is, at the close of the 1st century, Christians were found in nearly all the countries bordering on the Mediterranean sea, especially in Asia Minor, Greece, Italy, and the north of Africa. In the next two centuries not only did churches become numerous in all these countries, but they sprang up, here and there, in nearly all the other provinces of the empire. During this whole period Christianity was opposed, sometimes by unrestrained popular violence, sometimes by the government, and sometimes by men of learning. After the destruction of Jerusalem, Christians being no longer confounded with the Jews by the emperors, and their numbers being now mainly increased by converts from paganism, persecutions were directed

them as Christians. Under Domitian,
ns were punished as traitors. Trajan
ed persecution; Hadrian and Antoninus
uired that it should be conducted under
law; Marcus Aurelius gave a loose rein
opular fury. Then ensued a period of
years, during which the emperors man-
ittle interest in the subject, and individ-
ates were left to follow their own
So much the more severe was
ion of Decius, the first that extend-
out the empire, to the Christians
ome accustomed to a comparatively
l tranquil life. After 50 years of inter-
r mitigated persecution, followed the sec-
ral persecution under Diocletian, which
rith the change of the empire from a
a Christian state. While many men
ry eminence appear to have used their
against Christianity, Celsus and Por-
he former near the middle of the 2d,
latter toward the end of the 3d cen-
the chief antagonists who appeared as
The Christian apologists, Justin Mar-
a. Athenagoras, Tertullian, and Origen,
to the false and puerile accusations
st the Christians, and led to this
e great question between the two
uggling for existence henceforth
al merits. In this period, a dis-
ears between the clergy and the
between presbyter, bishop, and
; the sees of Rome, Alexandria,
ioch hold a preëminence above others,
ial synods are held. The writers
h directed their attention chiefly to
enominated heresies. Among these,
ous forms of Gnosticism were prominent.
uestions which began to agitate the
were amply discussed in the next suc-
period. The authorities relied on were
e and tradition. A lower tone of morali-
in the clergy and in the laity, had in too
stances begun to prevail.—*The second*
from the time of Constantine to that of
There are three things of most extensive
e that mark this period: the new world
t opened to the speculations of an un-
l age, the new attitude of Christianity
eligion of the court and of the state, and
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roduced by the invading armies of the
ns. These three circumstances enter
nto the causes which gave to the middle
peculiar character and condition. The
u operated before. But as the former
ras chiefly of a practical character, with
e and there a speculative mind in the
o centuries, and with undeveloped ten-
rather than completed results in the 3d
, there will be more unity in the treat-
f the subject, by viewing the whole
nt together. Nothing ever so extended
of human thought, or so aroused the ca-
of the mind, as the revelation of Chris-
th. It came at a time when almost all systems of philosophy were broken down, when men despaired of ever arriving at certain truth, when the age of profound thought had gone by, and every thing tended to intellectual weakness, to decay, and finally to gross barbarism. Still, in such untoward circumstances, it gave an astonishing impulse to the human mind. What are all the stupendous systems of Gnosticism, but attempts of minds still pagan in a greater or less degree to strike out theories of the universe that should comprehend the mediation between the finite and the infinite, after the idea contained in the incarnation of the Son of God? The new Platonic philosophy itself might never have been developed in Alexandria, had not Christianity rendered a new philosophy absolutely necessary. On minds essentially sound and Christian, we see the new scope which Christianity gave to thought in Justin Martyr, Tertullian, Clement, Origen, and Augustine. If it be the province of Christianity, not only to overcome all absolute evil, whether as opposed to truth or to the right, but to bring out and cure all partial evil where error has with it some admixture of truth, and wrong associates with itself some things that are right, we shall not be surprised that in the beginning, when Christian philosophy was as much in its infancy as Grecian philosophy was in the days of Thales and Pythagoras, there were ten heresies for every truth, and that the church was like a shrub from which shoot out bristling thorns at almost every point. We have not space even to name every shade of heresy recorded in the annals of the early church. To say nothing of the Cerinthians, Carpocratians, Valentinians, Ophites, Patripassians, Artemonians, Montanists, Manichæans, Noetians, &c., of the former period, we have a host of parties more or less connected with the Arian controversy, not only the Arians and semi-Arians, but the Eunomians, Aetians, Apollinarists, Adoptians, Nestorians, Eutychians, Monophysites, Monothelites, and many others. In the midst of these controversies broke out the Pelagian and semi-Pelagian heresies, as they are called. Constituted as the human mind is, it would be impossible that two such points as that of the Son of God dwelling in human flesh, and that of the Spirit or grace of God dwelling in the human mind, should not lead to much speculation and discussion in respect to the mode of the union. The scholastic theologians added little on these points to the doctrines taught by Athanasius and Augustine. Indeed it was their office not so much to discover truth as to confirm the decisions of the church. What most characterized the scholastic age in respect to doctrines was the standing controversy with speculative mystics on the one hand, and numerous sects of separatists on the other. There was scarcely a time when both of these tendencies were not ably represented. When Christianity became the acknowledged religion of the state, the whole outward condition of the church was changed. Politics and religion were henceforth combined. Sometimes the state

ruled the church, and sometimes the church ruled the state; but never were both kept strictly within their own bounds. We have only to look into the laws of the Christian emperors and the acts of the bishops to find abundant evidence on this point. At the beginning of this period the imperial court at Constantinople exercised a most decisive influence over the church. Not only were high ecclesiastics often dependent on the emperor, and subject to his will, but even councils were awed by his presence. At a later period, and in the West, the head of the church exercised authority over all Christian states. From the nature of the case, where there is such a union of the civil and ecclesiastical power, the one or the other must rule. There must be a last resort in all cases of collision. Thus, under Constantine, the church obtained protection and support, but in many cases at the expense of its independence. It rose politically and sunk morally at the same time. Piety and learning and missionary zeal retired more and more to the desert. Ambition both in church and state was renounced by the more devout, that in a life of meditation and prayer, and of poverty, after the example of Christ, they might live only for the world to come, and for the spiritual interests of mankind. Many of the greatest and best men of the early church chose this mode of life. In after times monasticism wore a very different aspect. The population of Christendom underwent great changes during the period introduced by Constantine and closed by Charlemagne. While paganism was completely extinguished, and Christianity was carried into Persia and even to India and Abyssinia, there arose a Mohammedan power in Arabia which blotted out Christianity from the map of Asia and Africa, of the eastern church left but feeble remains in Greece and Constantinople, seized upon a part of Spain, and threatened France, and indeed all the borders of the empire except the northern. Still more were the fortunes of Christendom affected from another quarter. The German races, a more vigorous stock, subdued the degenerate and feeble inhabitants of the empire. The ancient Christianity was almost obliterated, and the loose nominal Christianity of Visigoths, Ostrogoths, Vandals, and Burgundians swept murderously over the south and west of Europe. Afterward the Franks and Saxons, and other German tribes, came nominally into the pale of Christendom, regenerating and invigorating it politically, but pouring into the church a semi-barbarous population which it required centuries to subdue and civilize. The church had enough to do to manage the half-heathen population which was thus poured into its own bosom. Its missionary work was almost necessarily limited to its own borders. In the conversion of these tribes, the monks of Ireland, England, and the east of France, had shown great zeal, and in prosecuting their work a large number nobly sacrificed their lives. But too many among these German tribes were converted either as soldiers at the command of their royal leaders, or as subdued enemies by authority of their conquerors. The banks of the Elbe were for two centuries wet with human gore by such contests between the German and Slavonic races. With a population so introduced into the church, it is not strange that the wild, tumultuous character of the middle ages should show itself as much in the church as in the state. Herein lies the cause, if not the justification, of the Roman hierarchy. The concentrated authority of all Christendom, backed by the awful sanctions of religion, was, by the ecclesiastics of the age, deemed necessary in order to hold these fierce spirits in check. Certainly in the first half of this long period the nations of western Europe were indebted in no small degree to the church for the order that prevailed in society. Many other causes, indeed, coöperated to elevate the hierarchy, and to complete its organization. The church, which in the time of the earliest heresies and of the persecutions strove after unity through the bishops and through synods, became in a higher degree a united catholic church under the influence of Constantine and of the general councils. Its organization more and more resembled that of the empire. Single churches governed by their bishops, the churches of a province governed by synods and metropolitans, and whole countries governed as patriarchates, all seemed to imply the highest unity in a single head similar to that of the empire. But all these parts of a general organization were not equally complete. The hierarchical system was somewhat variable. In after times some things were retained, some went into disuse, and some received further development. The unity of the church was weakened by the jealousy between the eastern and western churches, and between the Greek patriarch and the Roman pontiff. The bishop of Rome was in the old capital of the empire, and the bishop of Constantinople in the new. The one capital had antiquity on its side, the other the presence of the Christian emperor and his court. When the division of the empire took place, and especially when the western empire fell and a new Christian empire was established in the West by the Carlovingians, the way was prepared for the complete separation of the Greek and Latin churches, which in the course of time ensued. The new Christian or German empire, called also the sacred Roman empire, increased the power of the bishop of Rome in many important respects, but was a check in other respects. The temporal power and authority of the pope were in general increased, but his influence over the clergy in Germany was thereby, in point of fact, restricted. Both the German church and the Gallican, in the course of time, had a more or less national character, supported by the emperor of Germany and the king of France, who often arrayed themselves in opposition to Rome. This was the great contest which lasted for centuries. From the 8th century to the 11th, the founda-

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and all institutions and observances depending on it, except those which were tolerated as indifferent; substituted preaching for the ceremonies of the church; and were especially zealous against indulgences, against the mass, and against the authority of the Roman see. They asserted that the Roman church was but a modified Judaism, a system of law and observances; that personal merit by works took the place of justification by faith. In addition to these and other theoretical differences, and the objections growing out of them, there was a long list of alleged abuses, which the reformers freely used to give point to their invectives. Among these they referred to the profligacy of the Roman court, the simony almost universally practised, the neglect of the Scriptures, the ignorance, idleness, and vices of the monks, the sale of indulgences, the draining of the coffers both of the rich and the poor on various pretences, the saying of masses for the souls of the departed, and the practice of holding religious services in a dead language, and leaving the people in a ecclesiastical system, and this controversy led by degrees to a questioning, and finally to a denial of the system itself. Both the reformers insisted on removing from the church whatever doctrines and principles were without foundation in the Bible. They came independently to the same conclusion in this respect, and were thus accidentally united in their opposition to the papacy. But in their positive construction of Christianity they represented different tendencies. Luther was more mystical, and allowed of more historical development in the church. Zwingli and his followers had less feeling, less imagination, less love of mystery, and represented rather the philosophic and rationalistic tendency in religion. The terms mystical and rationalistic are here used in a good sense. Nothing was better adapted to bring out the peculiarities of both orders of mind and types of theology than the question of the eucharist. While both rejected the Catholic doctrine of transubstantiation as unscriptural and unreasonable, Luther adopted a theory, somewhat inaccurately termed consubstantiation, as mysterious and inexplicable as that which he rejected; while Zwingli stripped the whole subject of its mystery, and exhibited it as a plain and simple emblematical rite, just as it is now viewed by most Protestant denominations in this country. The appearance of Calvin at Geneva, and his powerful metaphysical genius, gave a decidedly metaphysical and logical cast to the theology of the Reformed (Calvinistic) church, thereby distinguishing it from that of the Lutheran church. The *Loci* of Melanchthon and the "Institutes" of Calvin, the most celebrated Protestant theological productions of the age, favorably represent the ground type, as the Germans would say, of the theology of the two confessions. Perhaps, in the more logical character of the Reformed churches, as distinguished from the Lutheran, the reason predominating over the feelings, is to be found the cause of their greater individuality in matters of opinion, and greater diversity of creeds in different cities of Switzerland, and in different countries of Europe. The fact is unquestionable that the Lutheran church was much more homogeneous and united than the Reformed. In general the south of Europe remained Catholic, while the north became Protestant; and of Protestant countries, Switzerland and the west were Reformed, while the east, that is, the most of Germany and Denmark, Sweden and Norway, were Lutheran. The Genevan church was the model for France, Holland, Scotland, and in part for England, and consequently for North America. In the opinion of many Lutheran writers, the prominence given to the understanding over the religious sentiment in the Reformed church is the reason why Socinianism flourishes so much more in that church than in their own. The Reformed theologians, in turn, find in the mysticism of the Lutheran theology the cause of that revulsion of which rationalism is the result. We leave these points for others to decide. United as the church and state were in the 16th century, a reformation in religion could not take place without political convulsions. Not only were the Swiss cantons and the German states, especially the northern and western, immediately affected by the religious change, but the political rights of Protestants in general were long and fiercely contested, and were conceded only after the desolations of a 30 years' religious war. By the peace of Westphalia, Protestants were, in respect to political rights, put on an equal footing with Catholics.—Up to the time of the reformation there had always been Protestant elements in the Catholic church. Now these were drained off. The last appearance of any thing kindred to Protestantism was in the Jansenists, and that was suppressed. The council of Trent established by its decrees as authoritative rule of the Catholic faith, confirming, though in very general terms, the medieval theology, condemning Protestantism, and correcting some abuses no longer tolerable. It was the province of Jesuitism to make up for the loss sustained by the separation of the Protestants from the church by new conquests to the faith in heathen lands. By the missions of the Jesuits many converts were won in China, Japan, India, and America. At home, in Catholic countries, they have been a kind of standing army of the church. As they were very active and influential in the council of Trent through Laynez, the general of their order, and as their principles, with some slight exceptions, were the principles by which the church was maintained against Protestantism at home, and chiefly extended by means of missions abroad, it is hardly too much to say that up to the time of the suppression of the order in 1773, they were the true exponents of the spirit that ruled in the Catholic church of that age. They were sacrificed to expediency, and were restored as a change of circumstances. But owing to the continued operation of those causes, in a greater or less degree, which led to their suppression, the nominal restoration of the order does not place it where it was before.—The Lutheran church has felt the influence of time still more than the Catholic. In the controversy between Luther and Erasmus on the liberty of the will, the former carried his church with him; but on the mind of Melanchthon and some others the arguments of Erasmus made a deep impression. Before his death, Melanchthon, no longer restrained by Luther, who was now deceased, put forth views on this subject quite at variance with those held by Luther, and the Lutheran church followed Melanchthon rather than Luther. Since the days of the reformers, the principal controversies of the Lutheran church have turned on the question whether the reformation should be further developed and completed, or whether it shall be considered as having received its completion and fixed character from Luther. This question has never been settled for the whole Lutheran church, but the two parties, taking opposite sides, have

tended, and are still contending, for
Crypto-Calvinism, the doctrine of
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as they themselves did. What was
Christian life in Wittenberg would have been pronounced unchristian in Geneva. While Luther lamented the easy and lax morality of Wittenberg toward the end of life, without any attempt to control it by church discipline, Calvin was in a state of constant warfare with the "libertines" of Geneva in the matter of discipline. These two different types of Christian character are observable in the whole history of the two confessions. The Genevan church maintained its character through the 16th and 17th centuries, but during the 18th it gradually relaxed its theology, and in the beginning of the 19th was decidedly Socinian.—From Geneva proceeded, chiefly through Calvin and Beza, those influences which introduced the doctrines of the reformation into France. During the life of Beza, the Huguenots, as the French Protestants were called, became a numerous and powerful party; but for the greater part of three centuries they have been persecuted by the French government. Forty thousand were said to have perished in one month. Twenty-six years later, Henry IV., who had been educated in their faith, secured to them a political existence by the edict of Nantes, after which they flourished again in France for nearly a century. They had distinguished schools of theology at Saumur and Sedan, and numbered among their theologians such men as Blondel, Daillé, Bochart, Basnage, Beausobre, and Saurin. By the revocation of that edict by Louis XIV., hundreds of thousands of Huguenots were driven into exile. The refugees filled large cities and districts in several Protestant countries, particularly in the Netherlands and in Brandenburg. Now followed the period of "the church in the desert," during which, in the Cevennes mountains and other secret retreats, the Huguenots held their stealthy communions. The French revolution again brought them liberty, since which they have experienced the various fortunes to which the people of France have been subject.—The reformation made its appearance at an early period in the Netherlands. But the emperor Charles V., and after him Philip II., resorted to the severest measures in order to crush it out. The people endured this rigor for a long time, and then they resisted, and finally established their independence. The church, henceforth connected with Geneva rather than with Wittenberg, held its first synod at Dort in 1574, and the next year founded the university of Leyden. The most remarkable feature of the church of the United Provinces was the celebrated Arminian controversy. Arminius and others resisted Calvin's doctrine of predestination. The matter was brought before the synod of Dort, and, as most of the clergy had been educated at Geneva, the doctrines of the remonstrants, as the followers of Arminius were called, were condemned. Though the Arminian church never acquired a position of great influence in Holland, its leading men, among whom were Grotius, Episcopius, Curcellæus, Limborch, Le Clerc, and Wetstein, formed a school of wide-spread and lasting

influence in the literary world. The remonstrants became more and more latitudinarian in their views, and verged toward Socinianism far more than toward Calvinism. The Reformed church in Holland, though softened in the tone of its theology, has undergone much less change in its faith than the Swiss or the German church.—In England the doctrines of the Swiss reformers have had a peculiar fortune, owing partly to political, and partly to other causes. The attitude of Henry VIII. toward Luther was unfavorable to the introduction of Lutheranism into England. Distinguished theologians from Strasbourg sympathizing with the Swiss reformers, of whom Bucer and Peter Martyr are most known, were employed to aid Cranmer in carrying forward the work of reformation under Edward VI. Mary's troubled reign followed. English Protestants fled to the continent, where they became acquainted with Calvin and the spirit of the reformation introduced by him. On Elizabeth's accession to the throne, the reformation, begun by Edward, was carried through mainly on the principles of the Reformed church in respect to doctrines, but modified by Lutheran principles in respect to ecclesiastical organization and the ritual. Not that the Lutheran church government and liturgy were copied, but that Luther's theory, in respect to the extent to which the ancient usages of the church might be retained, was adopted. The church of England merely retained a little more both of the liturgy and of the government of the Catholic church than the Lutheran church did. It may be said in general terms that the Anglican church is eclectic, combining Calvinistic, Lutheran, and Catholic elements, while the Puritans of England adhered more strictly to the Reformed church. In England the history of Christianity and the history of the government are so connected that the one cannot be understood apart from the other. High churchism and toryism go hand in hand, while the moderate party and the dissenters favor the progress of liberty. England, too, has had its crisis of unbelief. The English deists exerted great influence both in their own country and in other countries of Europe. But in no country has the church been truer to herself in the defence of Christianity than in England. More eminent, perhaps, in antiquarian than in biblical learning, she presents a body of Christian literature which, as a whole, will bear comparison with that of any other country. The bishops of England have, in this respect, been outdone by the prelates of no other church.—Nowhere have the principles of the Genevan church been carried out more fully than in Scotland. Knox not only knew Calvin and his followers intimately, but deeply sympathized with them. He was a Presbyterian by nature and by temperament as well as by conviction; and the Scottish character in general, with its metaphysical tendencies, seems to be adapted to that type of theology and that form of religion. It would be difficult to conceive of a Scotchman as a Lutheran, either in his theology or in his ideas of religion. The Scottish church has maintained much of its original character through all the changing scenes of its history. It could neither be terrified by the Stuarts, nor bribed by pecuniary rewards or honors. The present Free church of Scotland is but a single specimen of the spirit and courage with which it has always been accustomed to face difficulties and dangers. The tendency to unbelief manifested in Edinburgh a generation ago was happily arrested by Chalmers, who was an ornament and a bulwark of his church.—Though scarcely any church of western Europe is without its representatives in the United States, the great bulk of the early emigrants to this country belonged to some one of the numerous branches of the Reformed church. Nearly all these churches have undergone some modifications in this country, more perceptible, perhaps, to Europeans than to ourselves. It is a common remark of intelligent foreigners, that with all the diversities of Christian sects among us, there is a general resemblance, apparently growing out of the entire freedom of religious development in our country. An ardent love of religious liberty, shared by all Christian denominations in common, a freedom from all entanglements with the state, and a strong aversion to the union of church and state, distinguish American Christians, and separate them widely from those of any other country. Hence, with all the diversities of creeds and forms of worship, there is not only a very catholic spirit, but a marked sentiment of Christian union, showing itself in harmonious action in cities and towns where different communions are thrown together, and in formal coöperation in societies of Christian benevolence. The relative position of the various Christian denominations in this country has greatly changed during the past century. The orthodox Congregationalists, less predominant in New England than formerly, have spread by emigration into the western and some of the middle states. They now constitute but one branch of the old church, the Unitarians constituting the other and more rationalistic branch. Indeed the theology of the Congregationalists of New England is never so perfectly settled as that of some other denominations. Every half century and every important locality has had its school of theology. This is not said in reproach. It is the natural and necessary result of giving to the intellect so great prominence in religion. The same cause not only prevents a "dead orthodoxy," a stagnation in theology, but makes them a highly intellectual and enlightened body of Christians, the best friends of learning and of education in general. The Presbyterians, having settled at first in the middle and southern states, consisting mostly of emigrants from Scotland and the north of Ireland, seem also to have, in some degree, a local habitation. The bulk of their population and their strength is l in those states. They expand, not in the ection of New England, but of the western tates. Like the Congregationalists, they have tained an educated ministry. The seat of learning and theological influence is at eton, New Jersey. With the exception he New School, which aims to be progres- ive, the Presbyterian church remains essen- ially what it was. It belongs to the old order. t has had a very able and influential ministry, ho have strenuously supported order in their hurches. The Episcopal church, which was hat checked by the revolutionary war, was somewhat local in the beginning, is antly manifesting fresh vigor and showing ower to go wherever wealth and refine- nt invite it. It flourishes best in old states of and in populous cities. As in England iginally took an intermediate position be- ween the Calvinists, Lutherans, and Catholics, o in this country at the present day it avoids ll extremes in theology, and holds a sort middle ground between the pietistic sects their extreme opposites. Avoiding the- al discussion, both in books and in the t, giving less prominence to preaching n most other Protestant communions, the opalians aim less at profound erudition the Congregationalists and Presbyterians eparing their candidates for the ministry, consequently place less dependence on the- al seminaries. In this respect they fol- he example of their English brethren. But it must not hence be inferred that they ave not an educated clergy. On the contrary, heir clergy are generally accomplished schol- rs, but their study is more in the line of Eng- ish literature, and in the rich literature of their wn church, than in exegetical and doctrinal the- . An educated man rarely hears any thing re to his taste in the discourses or other us services of an Episcopal clergyman. aptists and Methodists, though small in ers at the first, have had a large increase the common people in all parts of the . Though differing in their creed, in organization, and in their forms of reli- service, they both lay great stress upon rimental element in religion. The re- the heart, drawn out distinctly in in- ual experience, they have always placed above the religion of the intellect. Hence have never made learning a requisite for he ministry. Though they have made great rogress in education, and are no longer limited o the lower or even middling classes in the ommunity, still their great strength lies in these lasses. The Baptists are more nearly allied to the Congregationalists, both in doctrine and in practice, and the Methodists to the Episcopa- lians in church government, and to the Mora- vians in their religious spirit. In point of umbers they are the largest of the Protestant enominations. The Universalists, whose dis- ctive tenet is the final salvation of the whole n family, have made their appearance in American ecclesiastical history since the middle of the last century, and have received numerous accessions from most of the above-named Christian sects.—The Roman Catholic church, as represented by the highest authorities in that communion, maintains its prominent position in Christian history. During the last 3 centuries she has been forced by the Protestant movement to pass through a severe ordeal, in which all her constituent elements were put to the test; but, as they believe, she has emerged from the trial with undiminished vigor and brightness. Soon after the reformation had proclaimed that free private judgment was the right of man and the rule of faith, she was called, even more perhaps than Protestant communions, to defend the system of revealed religion against the assaults of infidelity and atheism. Subsequent to the breaking out of the French revolution, she was subjected in France to indignity and oppression from the civil power; her priests were scattered or put to death, bishops were exiled, popes were abducted and thrown into prison; but she came to see her adversaries baffled, her claims recognized, and her hierarchy restored. She has since endured the sorrow and waste of social and civil warfare in every one of her ancient possessions; but, as her disciples contend, modern innovation has been able only to retard her life march for brief intervals. They still further allege that her growth and expansion in most Protestant countries cannot be denied, while in all Catholic nations a daily increasing number of the faithful are devoting themselves to the strict practice of her law, and the upholding of her authority. Though in her collision with modern political and social systems, she, unlike other organizations, has been forced to no change of principles, she has nevertheless been able to throw off many old abuses and alliances that served more to encumber than to adorn her. This self-reforming and self-renovating power is claimed by Catholic writers as a proof of the constitutional strength of that church, and, combined with unity of faith, sanctity in moral teaching, universality in time and place, and unbroken apostolic succession, as a mark of the Divine presence. The present condition of the Catholic church, as they hold, is inferior to no period of her past history, in the learning and efficiency of her clergy, in her many educational establishments, her missionary enterprises extending over almost every portion of the known world, her active associations for the exercise of every form of Christian benevolence. America, according to views recently propounded in this country, offers a new field to the ancient faith for the display of its diversified energies. Here, for the first time in the world's history, the Catholic church finds herself free from all entangling alliances with the civil government, and thus avoids a great source of distrust and dislike on the part of her opponents. Here, persecution, if it should occur at all, either for or against her interests, would be the result of transitory passions, not of the system of government by which the country is ruled. Here, the very conservatism which in the old world has made her so many enemies, is claimed as a title to respect, in view of the necessity of vigorous principles to counteract the impetuous rush of unrestrained political freedom, and the often erratic intellectuality of a transitional and protesting age. In the United States the progress of the Roman Catholic church is evinced by the large army of ecclesiastics who have gradually spread from the solitary cathedral in Baltimore, where Carroll exercised episcopal functions, to the most distant parts of the land; by the numerous churches, schools, convents, asylums, and hospitals, that she has everywhere erected; by her incessant labors among the great mass of emigrants who are sent to her door by the policy of European governments; by the frequent accessions to her ranks from the strictest anti-Catholic communions; and by the first fruits of a Catholic literature which is believed to promise largely for the future.—We cannot speak more particularly of the religious bodies in this country, our object being not to sketch their history, but merely to illustrate the spirit of American Christianity by a few examples.—What conclusion in respect to the future can be drawn from the history of the past? Has Christianity a prospect of perpetuity and increase, or is it threatened with decay? It must be remembered that Christianity is not wholly limited to the church. Many elements of its power are felt elsewhere. The philosophy of government at the present day is preëminently Christian. The theory of human rights and of social progress differs from ancient theories in having a Christian basis. The literature of the civilized world is more and more a Christian literature. A Christian philanthropy is breathed into poetry and romance, as well as into social and political life, more than in any former age. The public sentiment is deeply imbued with the principles of a Christian civilization. Christian nations and races of men are the dominant nations and races of the earth. Christian civilization, at this moment, more than ever before, seems destined to spread over all Asia, Africa, and the islands of the great oceans. The paganism of the world is evidently to share the fate of the paganism of the old Roman empire, to fade away before Christianity, and become a mere matter of history. Is it probable that in Christendom itself Christianity will be compelled to yield to philosophical scepticism? Never did Christianity stand stronger in England than after its contest with deism. Never did the philosophic mind of France grasp it with more power than after atheism had spent all its force. There probably was never a time nor a country in which a historical Christianity could be maintained against the fiercest assaults of a sceptical philosophy with such a convincing power as in Germany at this time. That false rationalism which is essentially at variance with Christianity, deistically denying whatever is supernatural, has been already overcome. Nowhere, during the whole history of the church, has the defence of Christianity been conducted with such critical learning and philosophic power as in Germany, by the great theologians of the present century. Such a historical groundwork of Christianity as Neander has represented to the world in his history of the church, it is vain to look for in any former age. Indeed, history now, civil as well as ecclesiastical, is the impregnable fortress within which Christianity is securely intrenched. All the lines of philosophic history now converge in Christianity. Will the influence of sects and parties destroy the efficacy of Christianity? In respect to these, there is not only change but progress. It has become a pretty generally received opinion among the leading men of all sects, that the whole truth is to be found in none of them; that each is working out some problem, more or less important, to be adopted ultimately by all; that a more comprehensive view of Christianity will be possible after the good and evil in every system have distinctly made themselves apparent to the whole world. The greatest men of the age are already striving more philosophically and more satisfactorily to answer the fundamental question, "How is Christianity to be conceived of as a whole?" The old theological conceptions of it are found to be inadequate in many particulars, chiefly by defect. The theologians were at fault sometimes in their metaphysics, sometimes in their criticism and interpretation of the Bible. Christianity is many-sided. The old theological systems were, all of them, more or less one-sided. One aspect of this great subject, it would seem, was supposed to comprehend the whole. A broader and more comprehensive study of the subject was demanded. The accumulations of learning made during many generations needed to be more exactly analyzed and more carefully tested, and then classified on a much broader scale. All the approximations that had been made toward a clear and comprehensive view of the whole subject were to be studied with reference to a still greater enlargement. It is the manifest tendency of the public mind in this direction that distinguishes the present age. There is a reaching after a universal and complete Christianity, that is, the true historical Christianity, not the limited, partial Christianity of a particular school. Almost every party shows a disposition to appropriate whatever of truth or of excellence may be found in any other party. All seem to be aiming at a wider grasp of Christianity as a whole.

CHRISTIANS, a Christian sect which arose in the United States near the beginning of the present century. At their organization they adopted the appellation Christians as their only name, declared the Bible their only authoritative rule of faith and practice, and extended their fellowship to all Christians, irrespective of creed or party. They originated simultane-

in the E., W., and S., their 3 distinct
as having at first no knowledge of each
. In North Carolina, in 1793, a secession
place from the Methodist Episcopal church,
rounds of church government; and the
ing body, at first known as "Republican
odists," subsequently, through the influ-
f the Rev. J. O. Kelley and others, adopted
me of Christians. The 2d source was in
England, chiefly in Vermont. In 1800 Dr.
r Jones, Elias Smith, and other members
ptist churches, becoming dissatisfied with
ian creeds and denominations, proposed
rinciples now held by the Christians. The
hurch organized by them was in Lyndon,
nd many churches had been founded as
as 1804. In 1808 the "Herald of Gospel
ty." one of the earliest religious newspa-
the United States, was first published
r. Smith. The 3d source had its location
ntucky. After the great revival which
d through the Presbyterian church in that
in 1800, there were several ministers,
whom were B. W. Stone and D. Purvi-
who desired broader grounds of union,
5 of whom, in 1801, withdrew from the
l of Kentucky. They organized a new
, called the Springfield presbytery,
proclaimed their principles, June 28,
, and soon after adopted the name of Chris-
. The 3 kindred bodies which had thus,
1793 and 1804, arisen separately, soon
in general convention and were con-
into a single denomination. The gen-
vention has been continued from that
to the present, quadrennially. Though
written confession of faith, they are
Antitrinitarians and Baptists, but they
prayer meetings, Sunday schools, and
ry enterprises, and do not confine their
to the baptized. Among their more
clergymen and writers may be
Walter, Clough, Badger, Millard,
Summerbell, Holland, Kincaird, and
r. They have several institutions of
among which Antioch college is pre-
They publish 5 religious newspapers,
which is the "Herald of Gospel Liber-
now in its 50th volume. They number
0 conferences in the United States
about 1,500 ministers, and 250,000
ts; and above 1,000,000 persons
d to attend their ministry. (See
ell's "Church History," and Shaw's
Principles.")

IANS OF ST JOHN, DISCIPLES OF ST.
NAZAREANS, or MENDÆANS, designations
indiscriminately, and with great confu-
a sect of religionists now only found in
chiefly in the neighborhood of Bassorah.
are not Christians in any sense, as they
Jesus to be an impostor, and install John
st in his place. They claim to have
from his time, and consider their ori-
have been on the banks of the Jor-
They account for their present locality by asserting that the Mohammedans drove them away from Palestine, some to Persia and some to India. They afterward joined the Nestorians to avoid another persecution, and allowed themselves to be called Christians. They were separated again from the Nestorians more than 300 years since. Critics and historians are divided in opinion as to their origin. Their doctrines are, however, well defined. They consider the Jehovah of the Old Testament a spurious God, and the Christ of the New a false teacher. They consider the world to have been created by gloomy angels, who belong to the kingdom of darkness, of whom there are 7, who inhabit the 7 planets, while there is also a kingdom of light, superintended by angels. Back of these kingdoms, in unspeakable splendor, is the supreme original being, Ferha, and the female principle, Ajar. Darkness triumphs over light, but there is a struggle between the two kingdoms, and through successive revelations to the kingdom of light, and so to the world, the rule of darkness is to be broken. The Jewish system was not such a revelation; it came from the realm of darkness. So did that of Jesus. But in John the Baptist they hold that the revelation was from the kingdom of light. The means of introducing men to that kingdom is baptism. John they relate to have been born from a kiss of Zachariah. They also say that John himself was married, but that his children sprung out of the Jordan. They have 5 sacred books, 4 of them doctrinal, and the 5th on astrology. They consider baptism as the great and only means of forgiveness and salvation. They prohibit mourning for the dead, tolerate polygamy even among the priests, and forbid the "elect," or those advanced to the higher degrees of the faith, to use sensual indulgences, or to sing or dance. They keep a sort of festival resembling the agape of the primitive Christians, and have a singular antipathy to blue color. In the middle of the 17th century, when they first became known to the Christian world through the Persian missionaries, there were supposed to be from 20,000 to 25,000 families of them.

CHRISTIANS OF ST. THOMAS, a branch of the ancient Syro-Persian church, situated on the coast of Malabar. They have a tradition that St. Thomas himself preached the gospel to them, and established their church. The earliest certain history we have of the Syro-Persian church is in a writer of the 6th century. It was formed by the union of the excommunicated Nestorians (499), who held to the Monophysite doctrine. In their practices and doctrines they claim to be primitive. They still celebrate the agape, commemorate the Lord's supper with bread, salt, and oil, and anoint the body of the infant at the time of baptism. Their priests shave the head, and are allowed to marry. They use the Syriac language in the liturgy. During the Portuguese occupancy of the country they submitted to the Catholic church, but when the Dutch obtained the ascendency the Nestorians resumed their independent relation, and still preserve it, under the British government.

CHRISTIANSAND, a seaport town and province in the southern part of Norway. The province borders on the Skager Rack and the North sea; area about 15,000 sq. m.; pop. in 1855, 244,413. It is fertile, producing many cattle; and the fisheries are valuable. There are also rich iron mines. Much timber is cut still, and is exported from Christiansand, the capital of the province.—The town is well situated upon a deep fiord called Topdahl's fiord, which makes into the land from the Skager Rack, a few miles E. of the Lindesnäs, or South cape of Norway; lat. 58° 8′ 4″ N., long. 8° 4′ 9″ E.; pop. in 1855, 9,520. The situation is highly picturesque. The town wears much of its primitive aspect; the houses are chiefly of wood, and ornamented with gardens. It is the residence of the stift-amtman, or governor of the province, and of a bishop. The cathedral, a Gothic structure of gray stone, is only second in size and interest to that of Drontheim. It appears to be not a remarkably thriving place; the population has increased but 2,000 in 20 years. Ship-building has been the leading branch of industry. Timber is a principal export, with salt fish, and a great quantity of lobsters, which are sent to London. The number of small vessels employed in trade is very considerable. In 1853 no less than 827 vessels, measuring 39,398 tons, arrived in port, and 841 of 39,578 tons cleared. The town is defended by a fortress at the entrance to the harbor, on the island of Odderö. The port is frozen about 4 months in the year.

CHRISTIANSTAD, a town of Sweden, capital of the province of the same name, about 370 m. S. S. W. from Stockholm; pop. of the province in 1845, 177,767, in 1850, 189,627, and in 1855, 196,122; pop. of the city about 6,000. The town is built upon a little promontory in a lake, formed by the Helge-a, 14 m. from its port on the Baltic. It was founded by Christian IV. of Denmark in 1614, the southern part of Sweden being at that time a Danish possession. It is fortified. The place suffered much during the frequent wars between Sweden and Denmark. In 1678 it was nearly destroyed by Charles XI. of Sweden, during his contest with Christian V. of Denmark. It was rebuilt in 1710 and 1748. The modern town has a good aspect. The *krono-hus* (crown-house), on the N. side of the great square, for government and garrison purposes, a single large church of the year 1628, a lazaretto, a theatre, school houses, are among the principal buildings. In the environs is a prison with 92 cells. The name of the port of Christianstad, upon the Baltic, is Ahus; the harbor of which is open, but tolerably safe. The trade is chiefly with Lübeck, Russia, Denmark, and England. Much domestic brandy is sent to Stockholm.

CHRISTIANSTED, capital of the Danish island of St. Croix, West Indies; pop. 5,500. It has a good harbor, defended by Fort Christiansvärn, and a battery, contains a Danish and an English church, and a bank, and is the chief entrepot of commerce with Copenhagen. It is the seat of government of the Danish West Indies.

CHRISTIANSUND, a seaport town of Norway, in the province of Drontheim, situated upon the coast of the North sea, about 120 m. W. by S. from Drontheim, at the mouth of the Thingvo fiord; lat. 63° 10′ N.; pop. 4,700. It is built upon 3 islands, Kirkland, Nordland, and Inland, which enclose a singularly pretty harbor, in form almost circular. The view of the town is completely shut off on the seaward side. The houses, uniformly red and of wood, are grouped together in much picturesque disorder. In 1853, 102 vessels (9,081 tons) entered the port, and 117 (10,122 tons) cleared. The place is thriving, the trade being chiefly in cured fish (cod), which is exported hence to Spain and the Mediterranean, also to the West India islands. It was founded in 1734, by Christian VI. of Denmark.

CHRISTINA, queen of Spain. See MARIA CHRISTINA.

CHRISTINA, queen of Sweden, the only legitimate child of Gustavus Adolphus who survived infancy, born in Stockholm, Dec. 8, 1626, died in Rome, April 19, 1689. Her mother, the princess Maria Eleonor of Brandenburg, had already given birth to a daughter, named also in baptism Christina. This infant lived but a few months, and its mother gave the same name to the new-born child. Christina was but 6 years of age when her father died at Lützen, and she was not destined to enjoy the tender training of a mother. After the death of her father, she was early separated from the sorrow-stricken widow, and sent to be educated under the eye of her aunt, the princess Catharine, sister of Gustavus and consort of the count palatine John Casimir. She remained under this guardianship until the death of her aunt in 1638. Her father had evinced absolute confidence in the princess Catharine; but, nevertheless, the young queen's early education does not appear to have been judicious or effective. The palatine court rather sought its own aggrandizement. The son of the princess, Charles Gustavus, afterward Charles X. of Sweden, was betrothed to Christina during this guardianship. "I gave this promise," said the queen in later years, "at a time when I had not the right to dispose of a peasant's farmyard, much less of my own person." Meanwhile, she was educated also in deep distrust of the guardians appointed by the diet to have charge of her youth, and to govern the kingdom during her minority. Her early letters abundantly prove that at this time she had little confidence in those whom she afterward so much revered—those "honor-clad old men," as she came to style them. In 1636 the diet declared its opinion concerning the mode of educating the young queen. Christina herself relates that her father had ordered that she should receive a "mascu-

ation." Her tutor, whom he had him-
nted—John Mathiae, at first a professor
lege of nobles, and afterward the king's
acher—was a very learned man, and of
iberality of religious sentiment. Chris-
sequent infidelities, however, are traced
est apologists, not to the influence of
, but solely to her frivolous disposition.
r in accomplishments of every kind
arly years was remarkable. At 18
ucydides and Polybius in the origi-
wrote and spoke Latin, German, and
In council and administration she
ch acuteness; while the grace of her
personal demeanor at this period ex-
influence over all who approached
ugh she affected rather to slight than
outward dignity. "It is with digni-
said, "as with perfumes; those who
m do so almost unconsciously." Her
during the height of her renown, was
drawn by Chanut, a French ambas-
court who stood high in her favor,
considered good authority. "She
irst," says he, "excite the admira-
h is sure to follow upon more intimate
Her countenance changes with
of mental emotion; so much so,
, after the interval of a moment,
ly recognizable. For the most part
e, and in every change of aspect
something that is agreeable. If
ove of a remark made, her face is
a moment as with a cloud, which
or. Her voice, usually mild, can
assume the strength of a man's.
, below the middle size, would strike
wore the high-heeled shoes of wom-
for convenience in walking and riding
only men's shoes without heels." "Her
he adds, "is filled with incredible
virtue, and she is passionately fond
. She talks about virtue like a stoical
her. There are times when she seems to
crown beneath her feet." The queen
arginal notes in later years to her por-
hanut, generally in approbation, and op-
last cited remark she wrote: ["I held
to place beneath my feet that which
upon their heads;" adding present-
ver forgot that I was a queen."] Chanut
ises her gift of comprehension and re-
ess of memory; her love for the society
ed men, and scientific conversation, in
took admirable part; her reserve in
nt of public affairs, and in council;
n of secrecy, and her power to pre-
aviolate; her apparent mistrust, and the
with which she was made to change
d ["I never rued this failing," adds
a]; her power over the senate and her
f state, "resting," continues M. Chanut,
er personal worth. Nature has given
sover, every quality by which a youth-
would win honor. She was a great
often 10 hours at a time in the saddle, and no hunter in her kingdom was a better marksman. Her character was essentially masculine, always avoiding the society of her court ladies, and ever seeking conversation with men. She was bounteous rather than generous; too fond of a jest ["I thereby made myself many enemies"]; she had a high sense of the value of time, and slept but 5 hours ["3"—*Christina*], and in summer an hour in the afternoon ["False"—*Christina*]." She gave herself little trouble for her toilet, devoting to it not more than a quarter of an hour. Except on great occasions, a comb and scrap of ribbon was all her head dress; yet her hair falling negligently became her style of beauty, which was fair, with blue eyes, large agreeable mouth, fine teeth, and aquiline nose. Neglect of her person, however, was always carried to extreme. A contemporary said she combed her hair but once a week. Her observers at this time add, however, that she valued nothing but honor and virtue, predicting that her extraordinary merit alone would make her reign illustrious, independent of foreign conquest and the valor of her armies. Such was the bright promise of her youth, the more remarkable from contrast with coming shadows.—The administration of the regency during the minority was confided to a council of 5 members, at the head of whom was Oxenstiern, the chancellor of the late king. The death of this sovereign betokened great changes in the state of Europe. The German Protestants, now without a leader, were at once split up into factions. Their imperialist enemies, though worsted at Lützen (1632), were transported with joy at the death of their great opponent, and prepared vigorously to renew the war. Oxenstiern, meanwhile, was appointed by the Swedish regents to be "legato plenipotentiary of the Swedish crown in the Roman empire, and with all the armies." He proceeded to the theatre of the war, and devoted all his great genius to finding resources for the support of the Protestant cause. Christina assumed the exercise of sovereignty on Dec. 6, 1644. Her reign was begun most auspiciously under the guidance of the greatest statesman of the age. Her ingratitude was not slow to follow. Meanwhile the last victories of her army in Germany were hailed with rapture at home, and won for the commander his sovereign's cordial and graceful acknowledgments. Gen. Torstenson had overthrown the main army of the imperialists under Gallas. The remaining 3 years of the war were less brilliant in victories, but more remorselessly vindictive than the other periods. The closing year (1648) found France more than ever united with the Swedes. Turenne received orders to support the new Swedish general Wrangel, with his whole force. They effected a junction after much difficulty, and carried on a war of utter devastation against Bavaria. Charles Gustavus, the cousin of the queen, arrived from Sweden with reënforcements, and with the commission of generalissimo. Christina had sent him to

command the army in order to rid herself of his importunate courtship. He laid vigorous siege to Prague, and carried on his approaches with such determination that the place must soon have fallen, had not the emperor, dreading this catastrophe and the certain loss of Bohemia consequent upon it, resolved to arrest it by accepting the terms of peace his enemies should offer. The Swedes and French had overthrown every other power in Germany, and it remained for Ferdinand to make the best terms he could. Accordingly the treaty of Westphalia, securing Protestant liberty, was signed on Oct. 24, 1648, simultaneously in Osnaburg and Münster. Sweden received money equivalent to $5,300-000 for payment of her troops, and retained possession of Upper Pomerania, Rügen, Lower Pomerania up to the Oder, the delta of this river, with Stettin, Gartz, Wismar, Bremen, and Verden, all as fiefs of the empire. Christina's desire for peace had been ardent, undisguised even during the negotiations. It was destined, however, to bring to her lot greater cares and anxieties than she had suffered during the war. Throughout her dominions the great conflict left behind it profound internal derangements, so vast, so wearisome, that she soon manifested her resolution to commit the task to other hands. The war had been totally disproportioned to the forces of the country. A proper distribution of the burden became an insolvable problem. The internal balance of the state was profoundly disturbed, and there needed a creative spirit like that of the late king to restore it upon new foundations. Oxenstiern had withdrawn from court, having lost favor with the queen. His influence had been eclipsed by unworthy favorites, and although he shortly returned to his post and to the direction of affairs, he failed to satisfy the country; less indeed from the infirmities of great age, as has been said, than from a new order of things which in its operation jostled him aside. The most deserved reproaches have been heaped upon the dissolute and capricious Christina, but during great trials to which she was exposed, she gave proof of intellect and courage. She had brilliant merits to reward and many wrongs to redress, and the care which she gave to old and wounded soldiers demands great praise. She was young, vivacious, liberal without stint. The registers of her reign are filled with deeds of alienation of crown property, patents of nobility, tokens of grace and gifts of every sort. But it was soon evident that personal favor was to become the source of benefactions exceeding all others in amount. A young favorite, the handsomest of her courtiers, Magnus de la Gardie, was enriched with an annual income of 80,000 rix dollars in landed estate alone. This was the man whose influence soon threw aside the old chancellor like a worn-out glove. Other favorites in time eclipsed the brilliant De la Gardie, of whom Christina soon learned to speak contemptuously. Her father had already offered to Grotius an asylum in Sweden; and Christina invited learned men to her court from every quarter of Europe. They came in crowds, and dedicated their works in all the elegance of Latin phraseology to the queen. Among the number, Descartes was with the young sovereign at 5 o'clock every morning for 2 months (he died in Stockholm in 1650); and the impression which this philosopher made upon her mind has been said to have given her the first bias to scepticism. The origin of her new tendency, however, is with better reason ascribed to her physician, Bourdelot, who, having rescued her from a dangerous illness, prescribed gayety of life for the future, and imparted to his patient his own scorn of all religion. This man took the place moreover of the handsome De la Gardie, and through him presently all the favors of the throne were dispensed. She was constantly urged by the diet and her council to marry. The prospects of the monarchy were now inspiring much apprehension; but although her hand was sought by many princes, the queen resolutely declined a matrimonial alliance. Her father had intended her for Frederic William, afterward the great elector of Brandenburg. The popular wish was for her cousin, Charles Gustavus, who moreover appears from his own account to have desired to marry her from motives independent of ambition. Rather than not possess her, he says, he would content himself with "a piece of bread, and never see Sweden." This was in reply to Christina's saying that her person she could not bestow, but her crown she would confer upon him. She made light of his affection, and told him he talked "nonsense—a chapter from a romance." The result of the conversation, carefully related by the prince, was his positive rejection; but at the same time the queen resolved to abdicate the throne in his favor, and to seek independence abroad. She forthwith demanded that the diet should name her cousin successor to the throne. She was entreated to abandon this purpose; earnestly and affectionately did old Oxenstiern appeal to her in the emergency which threatened the country with civil war. Torstenson also, her tried old general, interposed. All in vain. The resolution naming her cousin successor to the throne was passed; and Oxenstiern, when obliged to sign it, declared that he would rather sign his own death warrant. He foresaw her abdication. One year later she made known this purpose. An independent life in other lands was now Christina's great desire. The impulse given to this longing, under present circumstances, was quickened by a fear that if she delayed, her renunciation of the crown would lose the lustre she wished to shed upon it through its perfect spontaneity. It began to be thought that the act might soon be forced upon her by the machinations of her enemies. A revolt even was threatened, and Christina, desiring to quell this, and to abdicate voluntarily thereafter, allowed another diet to assemble without communicating to them her

She carried but her purpose in the
licated; but the remainder of her
employed as though she had deter-
not to be regretted. Every species of
license became her daily practice.
treasure was squandered most dis-
She declared she would rather see
ll than her secretary with despatches.
elapsed without her holding a council
e created in all 460 new nobles,
them the court tailor, John Holm,
d the name of Leyoncrona (Lion-
was also made intendant of the
ld; and from these days, says one of
, dates the ruin of pure and de-
y. Divine service was scoffed at,
re than the queen herself. Crom-
lor, Whitlock, relates much of this
indecency; and some of the Swedish
ile they condemn Von Raumer and
oring their narratives too highly
are themselves unable to draw
court was crowded with dancers,
and singers. Ballets, in which the
lascivious entertainments of every
occupied the time of court and
ublic discontent began to rise to a
h, and at length Christina an-
the time had arrived when she
out her purpose of abdication.
d at Upsal, offered the usual
, at length acceded, the high
addi : "If this is to be, then the
b ." The solemn act of renun-
on June 6, 1654, and the in-
to have been spent by Christina
terms in regard to her future al-
money. The diet assigned her an
f 240.000 rix dollars a year; but be-
could be definitely settled, it
altercation between the queen
The ceremony of abdication is
to have had a mournful aspect.
eared in robe of state, with crown
and after an address of farewell,
one after the other, the various re-
cending then from the throne, she
to see her successor, Prince Charles,
place immediately. She begged him
to the royal chair. This he would
r presence; and during this scene
urable spectators were moved to
that she closed both her race and
God willed it, and seeing how she
them beautiful as an angel." After
Christina to her chamber, the king
o the great hall, and was crowned
Old Oxenstiern, tottering now upon
of the grave, wept as the queen
His blessing followed her, and with
xclaimed: "She is daughter still of
Gustavus." Twelve ships of war
equipped to convey her across the
took her way by land to Den-
ng all her Swedish attendants
On reaching a brook which then formed the southern boundary of Sweden, she alighted from her carriage, and leaping across it, she cried out: "Now am I free and out of Sweden, which I trust never to see again." Her country, however, soon became more estranged from her than she from it. Twice she revisited it, and on both occasions she was received and dismissed with distrust, if not with contumely. She was not yet 28 years of age, and carrying with her every thing curious or valuable from the palace of her fathers (even the very tapestries and furniture, so that it was necessary for such articles to be borrowed during the celebration of her successor's coronation), she abandoned her country as the abode of ignorance and barbarism. She travelled through Germany in the dress of a man, after having embraced the Catholic religion secretly at Brussels. Her public renunciation of Lutheranism was made soon after at Innspruck. The Catholics regarded the fact as a great triumph, while the Protestants were shocked at the conduct of the daughter of Gustavus Adolphus. She was cordially welcomed by the pope, Alexander VII., and at her confirmation by him adopted the name of Alexandra. In 1656 she went to Paris, where she was received with much and various sensation. Her talents and learning were the wonder of that capital. The learned men of Europe continued to be her subjects, as it were; but she seemed to become more and more unsexed. Her masculine air and libertine conversation kept women of delicacy at a distance. Mademoiselle de Montpensier thus describes her during this visit to Paris: "She is very small; a jerkin hides her bad figure; and in short, she looked to me like a pretty little boy. We went to the comedy, where her behavior surprised me. To praise the passages which gave her pleasure she would swear by God, lie down in her chair, throw her legs about, and assume postures not very decent. . . . . . She would fall into reveries, heaving profound sighs, and all of a sudden come to herself like one who wakes in a start." Ninon de l'Enclos was the only woman in Paris whom Christina noticed with any marks of esteem. She offered to mediate between France and Spain; but Mazarin declined the offer, and, under various pretexts, caused her visit to Paris to be shortened as much as possible. In 1657 she returned, and the contempt with which she had now come to be regarded was changed to detestation and horror, by a murder which she caused to be perpetrated at Fontainebleau, in the great gallery, almost in her own presence. Her favorite, Monaldeschi, was thus assassinated at her command. The French court testified some displeasure at the act, and during 2 months she did not show herself publicly in Paris. Yet Christina found apologists among her "voluntary subjects," as Geijer calls her learned friends. Leibnitz defended the act, which in short was allowed to pass, not only without punishment, but without inquiry. She found it necessary, however, to

leave France shortly afterward, passing the greater part of her time in sensual indulgence and literary conversation. She made vast collections of works of art and books, and founded an academy. In 1660, upon the death of the king of Sweden, she went to Stockholm, and began to intrigue for the recovery of the crown; but she was compelled to sign another formal act of abdication. Six years later again she visited Sweden, but found it prudent to return without venturing to Stockholm. She then made some vain attempt to be proclaimed queen of Poland. It has been found, however, impossible, and by the best Swedish historians it has been judged unnecessary, to penetrate the reasons upon which she grounded these proceedings. She died at length in Rome, bequeathing her fortune to Cardinal Azzolini. She was interred in the church of St. Peter, and over her remains a magnificent monument bears a long inscription, although she had expressed a wish to have these simple words: *Vixit Christina annos LXIII.* Her collections of art were sold and scattered about the world; 900 precious MSS. are in the Vatican, and the most valuable of her paintings were removed in 1722 to Paris, having been bought by the duke of Orleans, regent of France. She left some writings (collected and published by Archenholtz in his memoirs of her life, 4 vols. 4to., 1751), which, says Geijer, exhibit a soul ardent and untamed by years, striving in all things after the extreme and the supreme, but submitting at last. "The feminine virtues," he adds in conclusion, "which she despised, avenge themselves upon her good name; yet was she better than her reputation." See Geijer's *Svenska Folkets Historia;* Lacombe's *Histoire de Christine,* and D'Alembert's *Mémoires et réflexions sur Christine, reine de la Suède* (both of these are based upon the memoirs of Archenholtz); Catteau-Calleville's *Histoire de Christine, reine de la Suède;* Grauert's *Christine, Königinn von Schweden, und ihr Hof* (2 vols., Bonn, 1838–'42); and the works of Bayle and Voltaire.

CHRISTMAS (Christ and mass), a festival of the Christian church, observed on Dec. 25, as the anniversary of the birth of the Saviour. Its institution is attributed by the decretal letters to Pope Telesphorus, who died A. D. 138, and throughout the subsequent history of the church it has been one of the most noted of Christian solemnities. At first it was the most movable of the Christian festive days, often confounded with the Epiphany, and celebrated by the eastern churches in the months of April and May. In the 4th century the urgency of St. Cyril of Jerusalem obtained from Pope Julius I. an order for an investigation to be made concerning the day of Christ's nativity. The result of inquiry by the theologians of the East and the West was an agreement upon the 25th of December. The chief grounds for the decision were the tables of the censors in the archives of Rome; and although, in the opinion of some of the fathers, there was not authentic
proof of the identification of the day, y
cision was uniformly accepted, and f
time the nativity has been celebrated
out the church on the same day. It
been a common tradition that Christ
about the middle of the night. The
Roman Catholic countries of ushering
mas day by the celebration of 3
midnight, the 2d at early dawn, and
the morning, dates from the 6th centu
day was considered in the double
a holy commemoration and a cheerfu
and was accordingly distinguished
tion, by vacation from business, and
ment. During the middle ages it was
by the gay fantastic spectacle of dram
teries and moralities, performed by
in grotesque masks and singular cost
scenery usually represented an im
cradle, surrounded by the Virgin Mar
Joseph, by bulls' heads, cherubs, easte
and manifold ornaments. The custom
canticles at Christmas, called carols,
called the songs of the shepherds at the
Christ, dates from the time when the
people ceased to understand Latin. Th
and lower clergy often joined with the
in carolling, and the songs were enli
dances and by the music of tambour
violins, and organs. Fathers, moth
and daughters mingled together in t
if in the night, each bearing in his ha
ed wax taper. Many collections
made of these naïve mediæval car
filled the hours between the nocturn
and which sometimes took the place
in the churches. Of perhaps the old
collections, only a single leaf remai
ing 2 carols, preserved in the Bodl
in a volume of "Christmasse Carolles
by Wynkin de Worde in 1521. Davi
published a volume of "Ancient
Carols," with the tunes to which
formerly sung in England, and Will
made a more complete collection
1833). The carols of the Welsh are
celebrated, and their *Llyfr Carola*
Carols) contains 66, and their
Cymrū (Anthology of Wales) conta
German carols were collected by
(Grätz, 1853), and one of the best of
editions of French carols (*noëls*) was
at Poitiers in 1824. During the last
ceding Christmas it is still the custom
brian minstrels to descend from the
to Naples and Rome, saluting the shri
virgin mother with their wild
the poetical notion of cheering
birth-time of her infant at the
Christmas. In a picture of the
Raphael he has introduced a shepl
door playing on a sort of bagpipe. Pr
to Christmas the bells are rung at d
night throughout England and the
and after the solemn celebration of the
which the churches in France and Italy

orned, it is usual for the revellers to
collation (*réveillon*), that they may
to sustain the fatigues of the
the revels of the Christmas
so-called feasts of fools and of
que saturnalia, which were some-
d "December liberties," in which
serious was burlesqued, inferiors
their superiors, great men becom-
ie, and which illustrate the prone-
to occasionally reverse the order
l ridicule its decencies.—In the
cts of Germany and the north
istmas is often called the "chil-
al," and Christmas eve is devoted
esents, especially between parents
and brothers and sisters, by means
lled Christmas tree. A large yew
ected in one of the parlors, lighted
and hung with manifold gifts,
apples, nuts, playthings, and orna-
h of these is marked with the
person for whom it is intended,
the name of the donor, and when
ily party is assembled, the pres-
ibuted around the room ac-
labels, amid joyful acclama-
ulations. A more sober scene
e mother takes this occasion to
to the daughters, and the father
what has been observed most
and what most faulty in their
y, and still in some of the
North Germany, the pres-
the parents were sent to some
o, in high buskins, a white robe,
an enormous flax wig, becoming
of children, known as *Knecht Ru-*
from house to house, is received
its with great pomp and reverence,
children, and bestows the intend-
m according to the character
from the parents after severe
eautiful poem of Hebel, *Christ-*
rates the German ceremonies on
ve.—It is an old Swedish tradition,
the history of Olaus, archbishop
at the festival of Christmas the
the cold northern parts are
d strangely metamorphosed into
that a huge multitude of them
at an appointed place during the
so fiercely against mankind and
not fierce by nature, that the
of that country suffer more from
than ever they do from natural
ristmas has always been at once
omestic, and merry-making festival
equally for every rank and every
evels used to begin on Christmas
tinued often till Candlemas (Feb.
being a holiday till twelfth-night
the houses of the nobles a "lord
or "abbot of unreason," was ap-
se office was "to make the rarest
delight the beholder," and whose
dominion lasted from "All-hallow eve" (Oct. 31) till Candlemas day. The larder was filled with capons, hens, turkeys, geese, ducks, beef, mutton, pork, pies, puddings, nuts, plums, sugar, and honey. The Italians have the following proverb: "He has more business than English ovens at Christmas." The tenants were entertained at the hall; and the lord of the manor and his family encouraged every art conducive to mirth.

> On Christmas eve the bells were rung;
> On Christmas eve the mass was sung;
> That only night, in all the year,
> Saw the stoled priest the chalice rear.
> Then opened wide the baron's hall,
> To vassal, tenant, serf, and all;
> Power laid his rod of rule aside,
> And ceremony doffed his pride.
> The heir, with roses in his shoes,
> That night might village partner choose.
> All hailed, with uncontrolled delight
> And general voice, the happy night
> That to the cottage, as the crown,
> Brought tidings of salvation down.
> England was merry England when
> Old Christmas brought his sports again.
> 'Twas Christmas broach'd the mightiest ale;
> 'Twas Christmas told the merriest tale;
> A Christmas gambol oft would cheer
> A poor man's heart through half the year.

A glowing fire, made of great logs, the principal of which was termed the yule log, or Christmas block, which might be burnt till Candlemas eve, kept out the severity of the weather; and the abundance was shared amid music, conjuring, riddles, hot cockles, fool-plough, snap-dragon, jokes, laughter, repartees, forfeits, and dances. The generous wassail bowls and bowls of punch never failed to bring tumultuous joys. The favorite and first dish on Christmas day was a soused boar's head, which was borne to the principal table with great state and solemnity, "upon a silver platter, with minstralsye." There is a tradition that this custom originated at Queen's college, Oxford, in commemoration of the valor of a student, who, while on a walk reading Aristotle, being suddenly attacked by a furious wild boar, rammed the volume into the throat of the aggressor, crying *Græcum est* till he had fairly choked the beast to death. It was long observed in the Christmas festivities of the inns of court, and it is still retained at Queen's college, where the dish is brought in to the chant of an old half-Latin ditty:

> *Caput apri defero*
> *Reddens laudes Domino.*
> The bore's head in hande bring I,
> With gardlandes gay and rosemary,
> I pray you all synge merely,
> *Qui estis in convivio.*

The common custom of decking the houses and churches at Christmas with evergreens is derived from ancient druid practices. It was an old belief that sylvan spirits might flock to the evergreens, and remain unnipped by frost till a milder season. The holly, ivy, rosemary, bays, laurel, and mistletoe furnished the favorite trimmings, which were not removed till Candlemas. Chaplets of these were also worn about the head, a practice to which the phrases to "kiss under the rose," to "whisper under the mistletoe," are allusions. In old church calendars Christmas eve is marked: *Templa exornantur* (adorn the temples). Holly and ivy still remain in England the most esteemed Christmas evergreens, though at the two universities the windows of the college chapels are decked with laurel. It was an old English superstition that on Christmas eve the oxen were always found on their knees, as in an attitude of devotion, and that after the change from old to new style they continued to do this only on the eve of old Christmas day. This was derived from a prevalent mediæval notion that an ox and an ass which were present at the nativity fell upon their knees in a suppliant posture, as appears from numerous prints and from the Latin poem of Sannazarius in the 15th century. It was an ancient tradition, alluded to by Shakespeare, that midnight spirits forsake the earth and go to their own confines at the crowing of the cock, and that

> ——— Ever 'gainst that season comes
> Wherein our Saviour's birth is celebrated,
> This bird of dawning singeth all night long;
> And then, they say, no spirit stirs abroad;
> The nights are wholesome; then no planet strikes;
> No fairy takes, nor witch hath power to charm,
> So hallowed and so gracious is the time.

There was a famous hawthorn in the churchyard of Glastonbury abbey, which always budded on the 24th and blossomed on the 25th of Dec. After the change of style it was observed that it blossomed on Jan. 5, which would have been Christmas day O. S. It is said that slips from this thorn are preserved which blossom on Jan. 5 to the present time. Near Raleigh there is a valley said to have been caused centuries ago by an earthquake which swallowed up a whole village and a church. It was formerly a custom for people to assemble here on Christmas morning, to listen to the ringing of the bells of the church beneath them. The Christmas celebrations in England have lost their primitive boisterous character, the gambols and carols are nearly gone by, and family reunions and evergreen trimmings are nearly all that remain of the various rough merriments which used to mark the festival. The last memorable appointment of a lord of misrule was in 1627, when he had come to be denominated "a grand captaine of mischiefe." The poems of Herrick contain many descriptions of old English Christmas celebrations.—In the United States, since the Puritans were at first stern opponents of Christmas pastimes, the day has been less generally celebrated in New England than in the middle and southern states. It has been made a legal holiday in some of the states, and is usually observed by a religious service and by making presents, and not unfrequently by trimming houses and churches with evergreens, and by imitating the German custom of Christmas trees.

CHRISTMAS, Henry, an English clergyman, author, and editor, born in Taunton, co. of Somerset, England, in 1806. At an early age he entered Cambridge university, and after taking
his bachelor's degree, he sought and r
orders in the church of England. The "
of England Quarterly Review" was, at
ing, placed under his charge, and soon
one of the leading representatives of
churchism. The monthly "British
man" was also placed under the edit
pervision of Mr. Christmas. He was
same time, one of those who orig
famous Camden society of Cambridge,
several years the "Critic" and the "
Journal" received a stated letter eac
him, and the "Church and State Gaz
owes much to his aid. His publish
are numerous and upon a variety of t
travels, antiquities, moral philosophy,
and biography. His "Echoes of the Uni
"Cradle of the Twin Giants," a life
poleon III., a memoir of the late czar
I., and a biography of the sultan Abdul
are among his principal publications.
ed librarian of Sion college, London
was forced to relinquish many of hi
literary labors; but he impaired his
and next travelled in Spain and thr
south of Europe to Turkey in Asia.
doe, the authoress, and Risk Allah Effen
in his eastern travels. The "Church
land Quarterly Review," having pass
porarily into the hands of another, rev
Mr. Christmas in 1855, with whom it
mains. The royal society of literature
instituted in 1856 a professorship of h
archæology, and conferred the ch
Christmas.

CHRISTOPHE, Henri, king of Hayti,
the island of Grenada, Oct. 6, 1767,
own hand, Oct. 8, 1820. The acc
youth are conflicting, some relating
brought as a slave to St. Domingo at th
12, and was employed by his master as
which business he afterward followed
Haytien; others say that he fought in th
ican war of independence, was wounde
vannah, and subsequently went to St. D
where he soon found employment as an
on a plantation. When the agitation c
which resulted in the massacre of
and the independence of the black rac
tophe distinguished himself by activ
boldness. His bravery commended him
notice of Toussaint L'Ouverture, who g
a commission as brigadier-general, and
ed him to quell an insurrection in the
province of the island. Successful in
was appointed governor of the prov
when the French under Leclerc subj
part of the island, he and Dessalines
clared outlaws. When Toussaint was
the French, Christophe and Dessali
headed a rebellion, and before the close
succeeded in driving the French from
During the brief administration of D
Christophe was general-in-chief of
and at his death, in 1807, was app
dent for life by an assembly con

Haytien. The people of the southern portion of the island, however, preferred Pétion, and soon after organized a republic of which he was appointed president. A civil war ensued between the two chiefs, which continued for 11 years. In 1811 Christophe followed the example of Napoleon, and abolishing the republican government, caused himself to be proclaimed king of Hayti, under the title of Henri I., and organized a hereditary monarchy and nobility. He promulgated a code which, though based on the code Napoleon, was not a servile copy, but was adapted to the wants of the people. Meantime the defection of some of his adherents roused the jealousy and cruelty which seemed inherent in his nature, and did much to alienate the affections of his people. In general, however, his measures were judicious, but the mild and pacific sway of Pétion, and his successor Boyer, was far more agreeable to the indolent and peace-loving negroes than the stern rule of Christophe. The number and activity of the malcontents increased, till finally the army became infected, and even the king's body guard went over to Boyer. Irritated at this, and determined not to be the prisoner and sport of his foes, he shot himself.—His eldest son, Ferdinand, had been sent as a hostage to France by General Leclerc, and died there in a hospital. His 2d son, Jacques Victor Henri, was killed by the insurgents a few days after his father's death. A pension was conferred on the widow of Christophe, the ex-queen Marie Louise, but the enmity of the people caused her to leave for England. Subsequently she travelled in Germany and Italy, and took up her abode in Pisa with one of her daughters.

CHRISTOPHER, duke of Würtemberg, a Protestant prince of the 16th century, born May 12, 1515, died Dec. 28, 1568. At the time of his birth the duchy of his father Ulric was in a very unsettled condition. In a little more than 4 years the confederated Swabian cities expelled Ulric from his principality, transferred the dukedom to the house of Austria, and removed Christopher to Vienna. When Solyman besieged that city, Christopher was well nigh made a Turkish prisoner. But Charles V., fearing him more than his father, resolved to shut him up in a monastery, and for this purpose ordered him in 1532 to Spain. Christopher, finding an opportunity to escape, fled to Bavaria, where his uncle, the reigning duke, together with the landgrave of Hesse, took up his cause, and that of his father; and when unsuccessful by entreaty, recourse was had to arms, which, through the secret aid of the French king Francis I., and a sudden sortie on the Austrians at Laufen, May 13, 1534, resulted in the restoration of Ulric to his duchy. Christopher succeeded to the dukedom on the death of his father in 1550, and set himself about establishing the reformed religion in his province. Instead, however, of seizing the church property, and devoting it to his own use, or dividing it among his nobles, like many Protestant princes of his day, he constituted of it a fund called the "Würtemberg church property," out of the proceeds of which were supported all the public schools of the duchy, the university of Tübingen, and a variety of other public establishments. The duke also enlarged the liberties of the people, and gave them a code of laws. See Pfister's *Herzog Christoph, aus grösstentheils ungedruckten Quellen* (Tübingen, 1819).

CHRISTOPHER, SAINT, a saint of the early church, was beheaded in the year 250, in the persecution which the emperor Decius carried on against the Christians. Some writers have alleged that no such person as this saint ever lived; but the Bollandists and other learned critics, while they seem inclined not to give credence to the many legends which are connected with him, yet maintain that he existed, although very little is known about his history.

CHRISTOPULOS, ATHANASIOS, a modern Greek poet, born in Macedonia in 1772, died Jan. 29, 1847. He passed the greater part of his life in Constantinople, where he was styled the Anacreon of modern Greece. He composed a grammar, wrote dramas, and translated the Iliad into modern Greek. His poems are popular throughout Greece.

CHROMATIC, in music, proceeding by semitones.

CHROMATICS, that branch of optics which treats of the mathematical relations of colors. White light may be compared to a full chord in music, containing all the notes in the octave, but the comparison must not be insisted on too closely. By refraction through a prism, the colors may be separated more or less perfectly. This separation of colors by refraction takes place in nature by means of rain-drops, producing the parti-colored rainbow, or by means of minute snow-crystals, producing halos. By experiment, refraction can be produced in a great variety of ways, and the different colors of white light can also be brought out by other means than refraction. The mean distance between 2 waves in a ray of light is .0000225 of an inch. This distance in violet-colored rays is .0000167, and in red rays .0000266. To chromatics also belongs the discussion of the phenomena of polarization and double refraction. These phenomena depend upon the form of the wave of light, and the direction of the motion in that wave, the wave itself always going in a straight line. It is in these most minute and subtile optical investigations that the undulatory theory of light has achieved its highest triumphs.

CHROMIUM, CHROME (Gr. χρωμα, color), a metal so named from its tendency to impart beautiful colors to its compounds. It was discovered by Vauquelin in 1797, who separated it from the red chromate of lead of Siberia. It is a metal resembling platinum in appearance, having a white color with a shade of yellow. It is very brittle, so as to be easily pulverized, and is also very infusible and not readily acted upon by acids, except the hydrofluoric. It is hard enough to scratch glass, or even, as stated

by M. St. Clair Deville, to cut it like diamond. Its specific gravity is 5.5 to 5.9, and its equivalent number 28. Fused with alkaline fluxes, it is oxidized and converted into chromic acid. Different methods are given for obtaining it, the simplest of which is by reducing the oxide at an intensely high heat with powdered charcoal; or the chloride made into a paste with oil, and highly heated in a crucible lined with charcoal and well covered, may be more easily reduced. The metal has no particular interest or importance except in its compounds. It forms 5 different combinations with oxygen, of which the sesquioxide or green oxide (Cr_2O_3) and the peroxide (CrO_3) are the most important. The former is a beautiful green-colored powder, its shades increasing in intensity according to the heat to which it is exposed. When heated nearly to redness, it exhibits the same peculiarity as zirconia, becoming ignited and glowing like tinder. It is then insoluble in acids, but its solubility is restored by fusing with an alkaline flux. It imparts a beautiful emerald green color to borax and other glassy substances with which it is melted, and the color of the emerald itself is owing to its admixture. It is one of the few colors used for porcelain that bear the high heat required in baking it. Alone, it gives shades of green; combined with 100 parts of peroxide of tin and 33 of chalk, it forms the color used for porcelain known as English pink. Various processes are given for obtaining this oxide, as by calcining the chromate of mercury at a red heat, or by boiling a solution of bichromate of potash with sugar or oxalic acid and hydrochloric acid. The chromic acid parts with a portion of its oxygen to convert the sugar or oxalic acid into carbonic acid, and the green oxide of chrome produced is taken up by the hydrochloric acid. From this it is precipitated as a hydrate by ammonia. The hydrate is a bulky green powder. The sesquioxide occurs in nature combined with protoxide of iron, alumina, and silica, in the mineral known as chromic iron, and from this the supplies of chrome used in the arts are obtained. It is found in many localities in the United States, disseminated through the serpentine rocks. At the Bare Hills, near Baltimore, it has long been profitably worked and exported to England. The English market, which consumes about 2,000 tons annually, is supplied from this source, and from the Shetland islands, and Drontheim in Norway. The Baltimore ore yields from 40 to 60 per cent. of the oxide. The peroxide, or chromic acid, is obtained in acicular crystals of beautiful ruby red color, which deliquesce on exposure to the air, and on being heated become almost black. At a red heat they are decomposed, being converted by the escape of oxygen into sesquioxide. The solar rays effect this change upon the solution when a piece of linen saturated with the liquid is exposed to them. Water dissolves the acid readily, and becomes of a deep yellow brown. The solution has a sour metallic taste, and t
skin yellow. The readiness with
parts with oxygen renders it a useful
agent in chemical operations. It also
bleaching properties, which lead to
used as a substitute for chlorine in so
of calico printing. Different proces
taining this acid are in use; perhaps
is that of Mr. Warington. A cold
solution of bichromate of potash
with from 1¼ to 1½ times the qu
pure concentrated sulphuric acid.
ture becomes hot, and is then allowe
The chromic acid separates in brilli
matic crystals, which, taken from th
are drained upon a piece of porous
ware, the air being excluded by anot
placed upon them.—Chromates are th
chromic acid. The native "red lead
chromate of lead, containing 31.71 pe
chromic acid and 68.29 per cent. of
occurs in beautiful hyacinth-red cr
some of the gold mines of Brazil and
but the artificial compound is the mat
in the arts, prepared by mixing chr
potash with a soluble salt of lead. Th
precipitate, which falls, is the chroma
(PbO, CrO_3), or chrome yellow. Mi
Prussian blue, it makes chrome gre
chromate and bichromate of potash, w
largely used by the calico printers, are
from the native chromic iron. Th
duced to powder, mixed with ½ i
of nitrate of potash, and subjected fo
hours to a strong heat. The soluble
extracted by washing with water, and
cess is repeated until the ore is entirel
posed. On evaporating the washings
low crystals of chromate of potash ar
These are oblique 4-sided prisms, te
by 4-sided pyramids, of specific grav
They consist of 52 parts of chromic ac
of potash. The salt is insoluble in alc
is very soluble in boiling water. Ab
is taken up to 2 of the water at 60°.
ing property is so powerful that 1 par
perceptible yellow color to 40,000 of w
is used in chemical analysis as a test f
lead, bismuth, mercury, and for other
It is frequently adulterated with sul
potash, which, being isomorphous wit
be introduced in any proportion with
ing the crystalline form. The pres
sulphate is detected by the addition
drops of nitrate of baryte to the soluti
cated with nitric acid.—The bichromat
ash is obtained in fine large orange cr
rectangular or square prisms. Its
gravity is 1.98. Water dissolves
weight and acquires acid reaction.
tained by taking up ½ of the pot
chromate by an acid, as acetic or nu
as has been long practised, it may be
directly from the chromic iron by mi
with quicklime or chalk and exposing
intense heat in a furnace. It is then

in hot water, and converted into bichromate by the addition of a salt of potash. Its chemical formula is $KO\ 2Cr\ O_3$. It contains in 100 parts 68.4 of chromic acid and 31.6 of potash. Bichromate of potash is used in immense quantities by the calico printers.—The variety of colors which may be obtained from the numerous combinations of chromium, and the permanent quality of many of them, give great interest to this substance; and the full benefits that may be derived from it are probably very far from being yet appreciated. Some compounds of this character have been lately discovered by Prof. A. K. Eaton, of New York, and have been successfully applied to the printing of bank notes. The colors powerfully resisted the various agents that might be employed to remove them; but the extremely sharp and hard nature of the powders, to whatever degree of fineness they were reduced, was found to have an injurious effect in rapidly wearing the costly steel plates. The new combinations were discovered in the course of experiments made for the purpose of devising a practicable method of obtaining the chromate of magnesia, a compound then already known. They consist of the sesquioxide united with different bases, and the series may be represented by the general formula, $RO, Cr_2\ O_3$. They are produced by the double decomposition of bichromate of potash and the sulphates of the different bases, using an equivalent of each. The decomposition is effected at a red heat in crucibles, the sulphate of potash produced in the operation being removed by washing. The chromite of iron, $FO\ Cr_2\ O_3$, thus obtained, corresponding to the native chromic iron, is usually a crystallized powder, resembling, except in color, the sesquioxide. The crystalline structure commonly characterizes the other compounds, unless they are produced at a low temperature, when they assume the amorphous condition. The color of the chromite of iron is dark purple. The chromite of manganese is a lighter shade of the same color. The chromite of copper is a rich bluish black. The chromite of zinc is a golden brown; of alumina, a green scarcely differing from the sesquioxide except by being somewhat paler. Chromic solutions act powerfully upon organic matters. Small animals, as mice, birds, &c., are so completely dissolved in them that in a few minutes no trace of their hair, skin, or bones can be discovered. The workmen employed in preparing the compounds are much affected with troublesome sores and ulcers which are very difficult to cure. Paper impregnated with the salt makes a very good tinder.

CHRONIC (Gr. χρονικος, continuing a long time). A chronic disease is one which is inveterate, differing in many respects from an acute disease, which terminates speedily. The length of duration, however, is not the only distinction between chronic and acute disease. Intensity of pain and inflammation form the main features of an acute disease, while disorders of a dull, slow character and progress, without much pain or inflammation, are mostly termed chronic. The different forms of rheumatism, for instance, are divided into 4 varieties, termed acute, subacute, chronic, and nervous. The acute form of a disease may run its course in a few days or weeks, and then terminate, either by disappearing altogether, or continuing with a notable diminution in the intensity of the symptoms, and thus subsiding, as it were, into the chronic form. After long continuance in a chronic form, the symptoms may suddenly increase in their intensity, and thus assume the acute form for a short period, which may possibly terminate in a complete cure, or again relapse into the chronic form. Chronic disease is mostly associated with weak and nervous or strumous constitutions; but many originally strong constitutions become debilitated by long continued habits of excess either in bodily or mental labor, or in sensual indulgence; and all debilitated constitutions are subject to various forms of chronic disease of the digestive, the nervous, and the vascular systems.

CHRONICLE, a book narrating the events of universal history, or of the history of a particular people, epoch, prince, city, convent, or family, registering in the order of time, and without philosophical remark, all the details which either observation or tradition has furnished the writer. Chronicles were the earliest modern histories, the successors of the ballad in the order of the development of literature, and common throughout Europe during the middle ages. When wealth had been accumulated in the monasteries, and leisure was attained, the ballad, which had been the first solace and amusement of the popular mind, began to subside into the lower portions of society, while the better educated created for themselves the more learned and pretentious form of literature called the chronicle. Most of the mediæval chronicles were by monks, especially by the diligent Benedictines, who usually began their story with the creation of the world, or at least with Noah, and gave an abridged history of the events from the 1st chapter of Genesis to the immediate subject of their narrative. In their statement of facts they in general knew little distinction between fabulous and true history, were not inclined to question much either visions or miracles, and were accustomed to dwell as long upon a hail-storm or an eclipse of the sun, as upon a battle or change of dynasty. Chronicles are valuable for determining historical facts when, like that of Eusebius, they contain materials from older works which are now lost, or when they relate events contemporary with a writer, and of which he was a witness; and they are always valuable as illustrations of the spirit of an age and the sentiments of a people. It is through them that nearly all the history of the middle ages has been preserved. Every European people has numerous mediæval chronicles, which recount with equal particularity the origin of a nation, the history of a monastery, or the advent of cold weather.—The oldest German chronicles

are written in Latin; the most famous of them are the chronicle of Regino, abbot of a monastery in the forest of Ardennes, whose work extends from the Christian era to 907, within a few years of his own death; that of Hermannus Contractus, entitled "A Chronicle of the Six Ages of the World," to the year 1054; that of Lambert von Aschaffenburg, which recounts the period from the beginning of the world to 1050 in brief, and from 1050 to 1077 in detail; that of Godfrey of Viterbo, giving a universal history to the year 1186, written partly in prose and partly in verse, and entitled "Pantheon;" and a chronicle found in the collection of Pistorius, composed by an Augustinian monk, which extends from the Christian era to 1474. These, with many other Latin chronicles, have been collected and published at Hanover in a series of volumes entitled *Monumenta Germaniæ Historica*. The oldest historical book in the German language is a rhyming chronicle, consisting of 83,000 verses, written by Ottokar von Horneck, in the 13th century. Of nearly the same antiquity are the chronicles of Rudolf von Ems and Jansen Enekel, both having the form of poems, and furnished with notes by their authors.—The national chronicles of Spain and Portugal enjoy a high reputation, and fill the space between the 13th and 16th centuries, between the ballads and the romances. The earliest of them, entitled "The General Chronicle of Spain," came from the royal hand of Alfonso the Wise, about the middle of the 13th century. It is divided into 4 parts; the 1st, opening with the creation of the world, hastens over every thing till it comes to Roman history, to which it allows large space, and in which Queen Dido, a universal favorite with Spanish poets, is defended against the charges of Virgil; the 2d part treats of the Gothic empire of Spain and its conquest by the Moors; the 3d comes down to the reign of Ferdinand the Great in the 11th century, and abounds in the rich old traditions of the country, relating the outbreak of Pelayo from the mountains, and the stories of Bernardo del Carpio, Fernan Gonzales, and the 7 children of Lara; the 4th part opens with the history of the Cid, the great popular hero of Spain, so variously commemorated in Spanish literature, and closes with the death of St. Ferdinand, the conqueror of Andalusia, and the father of Alfonso himself. The "General Chronicle" was followed by the "Chronicle of the Cid," which has been translated by Southey, and is a most interesting picture of the stern violence and generous virtues of the period to which it relates. Subsequently a royal chronicler was appointed in each reign, and from the death of the wise Alfonso to the reign of Ferdinand and Isabella, every monarch became the hero of a chronicle. Ayala was the chronicler of the 4 wild reigns which occupied the last half of the 14th century, and is distinguished above all his contemporaries for the majesty of his style, and the nobleness of his sentiment, while his work has all the cool and business-like minuteness of its class. For 250 years the old Spanish loyalty and religious faith f
pression in chronicles; not only roy
and events were thus celebrated, but
deed of daring or wonder in which
became interested. Thus there was
icle of the passage of arms at
the truce of Tordesillas, of the ac
of the great captain Gonzalvo, and
chronicle of Don Roderic, which mar
sition to the romances of chivalry.
of Spanish chronicles was published
title of *Coleccion de Cronicas*, in 7 vol
1779–'87.—The chronicles of Italy beg
early ages of Christianity, and reach
century. The oldest of them are in L
the most important of which is the *H*
mana of Paulus Diaconus: they hav
lected by Grævius in a thesaurus of I
quities and histories, and are also c
the collection of Italian writers by
France is rich in chronicles, univers
ticular, written in Latin, French, a
provincial dialects. It was the
earliest chroniclers to give to Fran
origin. Thus Hunibald makes the
scend from Francus, son of Priam; a
of Tours adds the particulars that Fra
ed from the East first at Pannonia,
came with a colony to Gaul. Fred
content with a Trojan origin, makes
third in descent from a sea-deity.
much superior to the writers who ha
him, the friend of Alcuin, and the so
Charlemagne, chronicled the exploit
virtues, and talents of that emperor.
icle of Guillaume de Puitlaurent con
Albigensian war, and that of Guilla
gis concerning the reigns of Philip
St. Louis, abound in curious details.
the chroniclers who wrote in the p
guage was Geoffroi de Ville-Hardouin
in the 12th century, and was an actor i
which he describes. His work was
by Henri de Valenciennes; and the
chronicles of Froissart and Monstrel
between them the whole of the 14th
half of the 15th century. The chro
Denis, so called from the place of th
sition, recount the principal events
tory of France to the year 1355, and
been consulted to regulate the ceremo
ship, and to decide questions concer
leges, and the prerogatives of prince
The "Scandalous Chronicle," suppo
been written by Jean de Troyes, n
events of the latter part of the 15th c
was reputed a satire upon the times.
andrine chronicle, found in the collec
Byzantine historians, and relating
from the beginning of the world to
been published in France by Du
best collections of French chronicle
of Dom Bouquet and other Benedi
vols., Paris, 1738–1842), and of B
vols., Paris, 1824–'29).—The chronic
land are hardly less in number or i

[illegible] by [illegible] gravity [illegible] and ima- [illegible] of the [illegible] state [illegible] before [illegible] Ch[illegible], and [illegible] der, who [illegible] have [illegible] in L[illegible], and furnished [illegible] rhym[illegible] chr[illegible]les of [illegible] ch, of [illegible] Robert of Glou[illegible] Shakespeare derived the story of [illegible] ville that of Ferrex and Porrex, [illegible] ch of the [illegible] te [illegible] of his "Poly- [illegible] ny of their [illegible] work by Andrew [illegible] of St. Andrew, who [illegible] entitled "The Origynall [illegible]." a rhyming story in 8- [illegible] much universal his- [illegible] The Saxon Chronicle, [illegible] of our Lord to the death [illegible] Robert Fabyan wrote the [illegible] of Stories," first published in [illegible] the history of England from the [illegible] Brute entryd firste the ile of Al[illegible] 485; and the wars between the houses [illegible] and Lancaster are related in Hall's [illegible]," first published in 1542. The [illegible] onicles edited by Holinshed in [illegible] a history of England to that [illegible] and description of Ireland by [illegible] a history of Scotland translated [illegible] Boethius. [illegible] re than 50 works [illegible] ry of [illegible] d, w[illegible] be- [illegible] of several of them, [illegible] which [illegible] Matthew Paris, Roger [illegible] Wen- [illegible] Roger Hoveden, Ordericus Vitalis, Henry of Huntingdon, Matthew of Westminster, and Florence of Worcester, have been recently published in Bohn's "Antiquarian Library."

CHRONICLE, William, an officer in the war of the American revolution, born in South Carolina in 1755, fell in the battle of King's Mountain, N. C., Oct. 7, 1780. He belonged to the contingent furnished by South Carolina to her sister state in 1779, after the defeat of the united American and French forces in the fatal attempt upon Savannah. In 1780 he became major of a regiment designed to arrest the progress of the British from the low country of South Carolina into the interior, and was killed while gallantly leading on his men in the first action which followed. A monument was erected to his memory upon the battlefield.

CHRONICLES, the name first given by Jerome to two historical books of the Old Testament. By the Alexandrine translators they were termed *Paraleipomena*, or things omitted, being regarded as supplementary to the previous histories. In the original Hebrew they are entitled "Words of the Days" (*Dibre Hayamim*), and form, as their internal character demonstrates, but one book. The Chronicles open with genealogical registers of ancient and renowned families or races; they then narrate the history of David, harmonizing with the earlier account in the book of Samuel; then follows a history of Solomon, and of the increasing prosperity and glory of the Jews under him; after the division of the kingdom at his death, they trace the history of Judah, the more powerful branch, and continue the narrative till after the fall of Israel, and to the end of the exile in Babylon. They thus had a comparatively late origin, which is indicated also by the style and idiom, and by the Levitical coloring which overspreads much of the narrative. The Jewish and Christian traditions, from the earliest times down to the 17th century, have referred the Chronicles to the age and to the pen of Ezra. The first who assigned them to a later period was Spinoza, and his opinion that they originated in the time of the Maccabees has been accepted by many of the learned since him. The earlier Jewish records furnished the materials of the history in the Chronicles, and numerous books are mentioned as sources and authorities which have not been admitted into the canon. The design of the books seems to have been, by a review of the history of the theocracy, to prove that the Levitical worship had been maintained and favored by all pious kings, and that adherence to it or departure from it had been the condition of fortune or misfortune to the Jewish people. The discrepancies in numbers, dates, names, and facts, between the books of Chronicles and of Kings, have long been recognized, and have occasioned an important discussion between two parties of critics as to whether the integrity of the text or the authority of the history of the Chronicles should be surrendered. Among the most successful writers in vindication of the Chronicles are Movers, *Kritische Untersuchungen über die Biblische Chronik* (Berlin, 1838), and Keil, *Apologetischer Versuch über die Chronik* (Berlin, 1833).

CHRONOLOGY (Gr. χρονολογια, χρονος, time, and λογος, discourse or doctrine) may be defined as the science of determining historical dates. The unlearned man, familiar only with the modern mode of recording events, and with the uniformity of reckoning among modern western nations from the Christian era, and by the Gregorian calendar, can hardly have a just conception of the difficulties which chronology presents; and if such a conception is attained by him, can scarcely understand the mode by which modern chronologists have in some instances triumphed over those difficulties. The dates of events in the history of the principal nations can be readily determined from written contemporaneous testimony for about 1600 years, counting back from our day. For the next 1100 years, still counting back, we have written records, but not always contemporary with the events, and also engraved or sculptured records; these two sorts of history confirm each other, but the want of a common era makes it very difficult to fix dates during this period. From the monuments in Egypt, the bricks and cylinders of Assyria, and similar sources, rude estimates of the dates of Egyptian history may be made to about 2550 B. C., of Chaldean dates to 2234 B. C., and of Assyrian to 1273 B. C. Forty-four centuries may be thus reduced to tolerable certainty. For times preceding this era we have no means of estimating dates except from vague traditions, or from the narrative of the Old Testament. But as the three forms of the Bible (Hebrew, Greek, and Samaritan) which have come down to us differ materially in the ages of the patriarchs at the time of their sons' birth, it is useless to attempt any exact estimate of the time of the flood, or of the creation of man. Nearly all the eastern nations have legends of times when gods ruled on the earth for many thousands of years, giving way to demigods, and these to men; but these claims are considered by chronologists to be undeserving of attention, and to have arisen simply from the difficulty of conceiving an abrupt commencement to the existing order of human events. It is, however, conceded by the students of Egyptian and Assyrian remains, that civilization and art had already attained a high degree of development in Egypt and Chaldea at the earliest historic dates, 2200 to 2550 B. C.; so that the creation of man must have been many centuries earlier. The Egyptians have left us carved inscriptions on the pyramids, on obelisks, or other stones, also writings on papyrus, and on the wrappings of their mummies. These inscriptions have been deciphered during the present century, and have afforded means of criticizing the Greek historians, Herodotus, who completed his history about 430 B. C., and his successors, for instance, Ctesias, whose authority is now nearly destroyed, and Manetho. The latter writer was an Egyptian, and we possess only fragments of his work, preserved through their quotation in Greek authors. The testimony of the monuments is counted as most important, because it is contemporaneous, and frequently engraved by royal authority. Occasional passages in the Egyptian history thus determined connect themselves with Chaldean, Assyrian, or Jewish history, and are confirmed by Assyrian remains, and by the Jewish Scriptures. But the chronology of all the period remains obscure, and difficult to establish satisfactorily from two causes, the uncertainty of the order of succession of the kings, and the difficulty of determining the length of their reigns.—What we have said of the monuments of the Egyptians may be repeated of the remains of the Assyrians. Within a few years the explorations on the sites of Nineveh, Babylon, and their neighborhood, have brought to light numerous inscriptions on brick, pottery, seals, clay cylinders, &c., some of which, like some of the Egyptian inscriptions, have been accompanied by a translation carved in another to thus giving a clue by which the inscriptions are now deciphered. These mains enable us to criticize Herodo other Greek historians, and the fragments they give us of Berosus the Babylonian. Th history also connects itself with the Jewish Scr tures, and the two confirm each other, and us in judging of the difficult problem of Attempts are also made to bring astron the aid of chronology. Ancient historians, garding eclipses as prodigies and portents, casionally mention them as taking place connection with events of human history, astronomy enables us to determine when eclipse took place. Thus, if the shadow mov backward on the dial of Ahaz was produced an annular eclipse (none but a prophet c foretell such an eclipse in that age of world), it might be possible by astronom fix the date when an eclipse was annular Palestine. Again, it is said by Herodotus in the last struggle between the Medes Lydians, hostilities were brought to a sud close by the day turning into night. If astron my could determine with accuracy in year about 610 B. C. a total eclipse passed ov the scene of battle, this would fix the date this battle. But it must be allowed that t calculation of a solar eclipse at such a dis of time is a somewhat uncertain operation: minutest error in our modern tables throw the shadow of the moon on an entire different part of the earth from the scene Cyaxares's fight, or from Ahaz's dial. eclipses are more readily used in fixing as they do not require so much nicety of calcu lation, being visible to a whole hemisphere once. Thus an eclipse of the moon, rec by Thucydides as occurring in the 4th y the 91st Olympiad, enables us to fix that ye as corresponding to 413 and 412 before our er During all the early periods of which we hav been speaking, the accession of the reignin sovereign seems to be the only era from whic to date; and as if this were not confu enough, different kinds of years are used b ferent nations, and even by the same nation different purposes. The Egyptians had 3 one of 360 days, a second of 365, and a t 365¼. Each of these kinds of years wa vided into 3 seasons, spring, summer, and ter, of 4 months each, each month having days. In the second kind of year, 5 days we added to the end of the 12th month; and i the third these 5 supernumerary days every 4th year, made 6. The year of days was the oldest; but the year of days was known long before 1322 B. C. square year of 365¼ days was reserved for ticular occasions, when more accurate cal tions of the return of the seasons were req The oldest year in all countries was prob 354 days, as, in all languages, the month named from the moon.—The ancient monu ments of Greece afford us no means of verify

history; and we have
preserved by later his-
build our chronology of
Trojan war these tra-
: the epoch of the war
ain. But after this
a more definite form;
the first Olympiad, 776 B.
Grecian history are tolerably
he Olympiads were periods of 4
from the games so famous in his-
ere celebrated every 4th year, in
f the first moon after the summer
ir first establishment is tradition-
to different dates in the 14th and
B. C.; but the first historical
f their reëstablishment by
, and Lycurgus, 844 B. C.;
until the century after this that
be dated from them. The
Corœbus was victor, 776 B. C.,
starting point from which to
piads. For 87 Olympiads the
ted of 354 days, in months
alternately; but they had a
4 times, afterward 3 times in
adding a month of 30 days to
r. Other attempts were made to
rs to the actual course of the
year of the 86th Olympiad,
of 19 years was introduced.
long as the Olympic games
l was revived by the coun-
determination of the period
old adjustment, however, of put-
nal months into every 8 years,
in civil matters even after the
cycle of Meton was known.—
tory of Rome is shrouded in an
which hangs over that of
Roman historians date from
the city, but there are 5 dif-
igned as the date of this event—
r of the 6th Olympiad to the 1st
h: that is, from 753 to 747 B. C.,
being considered by modern
the most probable. The Roman
kinds: the civil year, which be-
kalends of January, but whose
ed to depend upon the whim of
and the consular year, which,
century of Rome, had no fixed
d lasted until a new election,
be earlier or later, according as
determined the day for holding
consulate is the date usually
Latin historians. The foundation
on April 21; hence the year of
correspond in its whole length to
the consular year.—The Chris-
d from the birth of Christ, does
correspond in its epoch with that
eral years. It was, perhaps, in-
6th century by a Roman abbot,
Little, although he reckoned from
nths sooner than the common era. This original era of Dionysius was used in parts of Italy and France down to a very late period; in Pisa till 1745. The chronicles of the middle ages sometimes use other periods from which to reckon the year of the Lord; such as March 25 after the common era, Easter day, March 1, Christmas, &c. A knowledge of these differences is indispensable in explaining the apparent contradictions in the dates of events in the middle ages. Care must be taken with regard to events subsequent to 1582 to determine whether the old or new style is used, the difference between which, in the 17th century, was 10, in the 18th 11, and in the present century 12 days. Care must also be taken to decide whether a writer calls the year immediately preceding our era 1 B. C. or 0 B. C.; mathematical writers usually adopt the latter notation.—The earliest Jewish, like the earliest Egyptian year, began in the autumn, and in civil affairs and in the regulation of jubilee years the autumnal equinox is still considered by the Jews the beginning of the year, while in other ecclesiastical affairs the year is counted from the passover, or from the vernal equinox. As the feasts of the Jews have reference to the seasons of the year, the entire year was by intercalation kept nearly of true solar length, while the months were purely lunar, beginning with the appearance of the crescent moon in the west. The intercalation was effected by throwing in a month of 30 days before Nisan whenever the 15th of Nisan (the day of the passover) would otherwise come before the vernal equinox. After the dispersion they adopted a cycle of 84 years, in which they were imitated by some Christians. But when the council of Nice adopted the Metonic cycle of 19 years for the determination of Easter, the Jews also employed it to determine the time of the passover. Until the 15th century the Jews used the era of contracts or era of kings (see Maccabees), which dates from the first conquests of Seleucus Nicator in Syria. But some writers make the year begin in the spring, others at various times in the autumn; some employ a year of 365 days, others of 365¼. The era is commonly computed as 311 years 4 months before the common Christian era. Since the 15th century the Jews generally date from the creation, which they suppose to have taken place in September, 3761 B. C. The estimates of the real epoch of the creation of Adam, by students of the Old Testament, vary from 3616 to 6984 B. C. The Greek Christians who date from the creation, as was done in all Russia before Peter the Great, place it in Sept. 5509 B. C. The Abyssinians are said still to use sometimes the old Coptic or Alexandrian era, which was established by Julius Africanus as the true date of creation, 5502 B. C., but which, since the accession of Diocletian to the throne, has been taken as 5492 B. C. This latter era coincides nearly with that of the Syrian Christians or of Antioch. The era of Nabonassar is famous in history from being

used by Hipparchus and Ptolemy in astronomy; it is fixed at midday, Feb. 26, 747 B. C. It was borrowed from the Chaldeans, the first astronomers, and is named from the king who first raised Babylon to high renown, and who is said by Berosus to have destroyed the records of other kings in order that the Babylonians might date from him. This era was used with a year of 365 days, until about 25 B. C., when at the Julian reformation of the calendar the Greeks at Alexandria, who dated from Nabonassar, introduced leap years of 366 days. Some Greek historians date from the death of Alexander, 323 B. C. A few medals and ecclesiastical records date from the era of Tyre, 125 B. C. Evagrius and others date from the battle of Pharsalia, Aug. 9, 48 B. C. In Spain, Portugal, the south of France, at Carthage, &c., it was usual until after the 9th century to date from Augustus's conquest of Spain, 39 B. C. Medals struck at Antioch in honor of Augustus are frequently dated from the battle of Actium, Sept. 3, 31 B. C. Some writers using this era (for 8 or 9 centuries) place the date a few days earlier. The Alexandrians introduced an era (from the accession of Diocletian), Aug. 29, A. D. 284, called the era of martyrs, which is still used in parts of Africa, counting from it in cycles of 532 years. This custom of counting in cycles also prevailed in the Roman empire in the first centuries of our era, the cycle being, however, a short one of 15 years, called the cycle of indiction. The Chinese of the present day use a cycle of 60 years. The Armenians use the year of 365 days, counting from the council of Tiben, July 9, A. D. 552, and also the Greek era of creation, 5509 B. C. In all Mohammedan countries the date is from the Hegira, the flight of Mohammed from Mecca to Medina, July 16, A. D. 622. The Mohammedan year is without reference to the sun or seasons, being 12 moons, or lateral months. Nineteen years out of 30 contain 354 days, the remaining 11 years contain 355 days. In the Bengalee reckoning solar years are used, and are numbered about 9 less than those of the Hegira; hence the two reckonings coincided about A. D. 1530, and the Bengalee probably started at that time from the Mohammedan. The Persian years are counted from the accession of Yezdegird III. to the throne, June 16, A. D. 632. Up to the 11th century the Persian years were 365 days each. In A. D. 1075 their calendar was reformed, and they used leap years of 366 days, once in 4 years, each eighth leap year being, however, postponed to the fifth year. The Indian nations have various eras and modes of computation which are difficult to our western understandings. The Hindoos have a sidereal year and a lunar year, the former used in public affairs, the latter in domestic and religious matters. Their principal eras are the Kaliyug, which commenced 3101 B. C.; the Vicramaditya, named from a conqueror, 56 B. C.; the Salivahana, named from a royal patron of art and science, A. D. 78; and the Fuslee eras, which date from about the time
of the Hegira. The Chinese use 2 y
year for civil purposes, and a solar
days for astronomical and other rec
employ cycles of 60 years, and s
has been the case from 2397 B. C.
B. C. Chinese writers have also dated
of the reigning sovereign. Among
the French dated at one time by the
republic, and it is customary for pu
mations in this country to be dated b
tian era, and also by the year of th
ence of the United States. Chronolo
computations frequently use a per
years of 365¼ days each, called
period, which counts from B. C.
this is not used in dates.—Amon
important writers on the subject of
are Archbishop Usher, *Annales Vet*
Testamenti (London, 1650–'54); Sir
ton, "Chronology of Ancient King
don, 1728; an answer to it was
Freret, Paris, 1758); Jackson, "C
Antiquities" (London, 1752); Blair
ogy and History of the World" (Lo
a new edition, revised and enlarg
Rosse, was published in London. 1
fair, "System of Chronology"
1784); Hales, "New Analysis of C
(1800–1812); Clinton, *Fasti Hellen*
1824–'34), and *Fasti Romani* (O
'50); Sir Harris Nicolas, "The Ch
History" (in Lardner's "Cabinet C
vol. xliv. 1833); Riccioli, *Chronol*
mata (Bologna, 1669); Scaliger,
tione Temporum (Paris, 1583), and
Temporum (1606; best edition,
1658); Petavius, *De Doctrinâ Temp*
1627), and *Rationarium Tempo*
1630); the Benedictines of St.
prepared the *Art de vérifier les da*
tion, 1783–'87), which has been c
the present time by Fortia d'Urban
lion-Figeac, *Résumé complet de ch*
nérale et spéciale (Paris, 1830);
Chronologie universelle (1853); K
tem der Zeitrechnung in chronol
bellen (Berlin, 1825); Ideler, *Ha*
mathematischen und technischen
(Berlin, 1825), and *Lehrbuch der*
(Berlin, 1831); Matzka, *Chronolog*
ganzen Umfang (Vienna, 1844); L
nologie der Aegypter (Berlin, 1849)
Chronologia Sacra (Leipsic, 1846),
tigungen der Römischen, Griechisc
chen, Aegyptischen, Hebräischen Ge
Zeitrechnung (Leipsic, 1855), an
"Summary of Recent Discoveries
Chronology," &c. (New York, 1857
son's translation of Herodotus, 2
which were published in London
furnished with dissertations of grea
respect to ancient chronology by Co
Rawlinson and Sir Gardner Wilk
following table contains some of th
portant historical dates, for the m
given by the usually received autho

HRONOLOGY FROM THE EARLIEST TRADITIONS TO THE PRESENT TIME.

m of the world, according to the Hebrew text
ripture.
ounds the Chinese empire.
first king of Egypt (3893 according to Lepsius;
according to Bunsen).
luge.
ncement of astronomical observations at Bab-

Great founds the dynasty of Hia in China.
m of Sicyon established.
en I. (Sesostris?) king of Thebes (Rawlinson).
en II. (Sesostris) (Lepsius).
rd kings in Egypt (R.; 2000, L.).
f Abraham.
m of Argos established.
, 1st king of Athens.
epherds (hyksos) expelled from Egypt (R.).
s brings letters into Greece.
raelites depart from Egypt (1312, L.).
ic games.
of Moses and Aaron.
h founded.
es I. in Egypt (R.).
es II. (Sesostris?) in Egypt (R.).
ria (R.).
expedition.
nent of the Trojan war.
roy.
gdom.
l. David king of Israel.
(Shishak) king of Egypt (R.; 983, B.).
non.
ndered by Shishak.
silver coined at Argos.
ounded by Dido.
nt of the Olympic era.
nassar.
e Wise king of Egypt (R.; 743, B.).
king of Assyria (R.).
f Lydia (R.).
n by the Assyrians (R.).
I. of Ethiopia in Egypt (R.).
II. (Layard).
, king of Assyria, takes Ashdod (R.).
(Tirhaka) in Egypt (R.; 700, B.).
f Lydia (R.).
as I. king of Egypt (R.).
founded.
res, king of Media, attacks Nineveh (R.).
es king of Lydia. Nabopolassar of Babylonia,
Cyaxares of Media, destroy Nineveh (R.).
king of Egypt (R.; 616, Clinton).
ation of Nineveh.
hadnezzar king of Babylonia (R.).
aking of Jerusalem by Nebuchadnezzar.
rchon of Athens.
f Jerusalem by Nebuchadnezzar (R.).
hadnezzar takes Tyre (R.).
r money coined at Rome.
Tyre.
s king of Egypt (Psammetichus II., B.)
omedy performed at Athens.
of the Persian empire by Cyrus.
built by the Phocæans.
annexed to Persia; Jews allowed to return
Babylonia.
of Cyrus.
conquered by Cambyses.
of Cambyses.
sion of the Tarquins; Rome a republic.
subdued by Darius Hystaspes.
burnt by the revolted Greeks of Asia Minor.
ishment of the tribunate at Rome.
of Marathon.
of Darius.
reconquered by the Persians.
invades Greece; battles of Thermopylæ and
mis; Persians burn Athens. The Carthaginians
ding Sicily defeated by Gelon.
of Platæa and Mycale; Persians evacuate
ece.
of Aristides. Birth of Socrates.
ns defeated by Cimon.
of Xerxes.
natus dictator.
mvirate at Rome. Appius Claudius.
lotus emigrates to Thurium.
eak of the Peloponnesian war.

B. C.
429—Death of Pericles. Birth of Plato.
406—Battle of Ægospotamos.
404—Athens taken by Lysander. Death of Alcibiades.
401—Battle of Cunaxa; death of Cyrus the younger. Retreat of Xenophon.
399—Death of Socrates.
384—Birth of Aristotle.
389—Rome burnt by Brennus.
371—Epaminondas defeats the Lacedæmonians at Leuctra.
362—Battle of Mantinea; death of Epaminondas.
359—Philip king of Macedon.
356—Birth of Alexander. Temple of Diana at Ephesus burned.
351—Revolt of Phœnicia against Persia. Siege and destruction of Sidon.
348—Death of Plato.
338—Battle of Chæronea.
336—Philip assassinated; Alexander succeeds.
335—Destruction of Thebes.
334—Alexander marches into Asia. Battle of the Granicus.
333—Darius defeated near Issus. Damascus taken. Tyre besieged.
332—Fall of Tyre. Foundation of Alexandria.
331—Battle of Arbela.
330—Darius killed by Bessus.
327—Alexander invades India.
323—Death of Alexander; his empire divided.
322—Romans humiliated by the Samnites at the Caudine forks. Death of Demosthenes and Aristotle.
318—Death of Phocion.
315—Thebes rebuilt.
312—Commencement of the era of Seleucus.
306—Demetrius Poliorcetes gains a great naval victory over Ptolemy.
301—Battle of Ipsus, in Phrygia.
300—Seleucus Nicator builds Antioch, Edessa, and Laodicea.
288—The colossus of Rhodes completed.
280—Pyrrhus defeats Valerius Lævinus at Heraclea.
270—Hiero II. king of Syracuse. Death of Epicurus.
265—Commencement of the Punic wars.
256—The Carthaginian fleet defeated near Ecnomus.
241—End of the first Punic war.
235—The temple of Janus closed for the first time since Numa.
231—Subjugation of Sardinia and Corsica by Rome.
227—Earthquake at Rhodes; the colossus thrown down.
219—Hannibal takes Saguntum. Second Punic war.
218—Hannibal crosses the Alps; defeats the Romans on the Ticinus and Trebia.
216—Battle of Cannæ. Hiero of Syracuse dies.
215—Chinese wall erected against the Tartars.
212—Syracuse taken by Marcellus; death of Archimedes.
206—Dynasty of Han in China.
204—Scipio enters Africa; defeats the Carthaginians.
203—Hannibal recalled to Africa.
202—Battle of Zama, and defeat of Hannibal.
201—Carthage submits; end of the 2d Punic war.
197—Victory of Cynoscephalæ over Philip.
190—Antiochus the Great routed by the Romans at Magnesia.
183—Death of Hannibal, Scipio, Philopœmen, and Plautus.
171—Third Macedonian war.
170—Jerusalem taken by Antiochus Epiphanes.
168—Æmilius Paulus defeats Perseus of Macedon at Pydna.
167—Revolt of the Jews against the king of Syria.
160—Judas Maccabæus falls in a battle against Bacchides. Death of Æmilius Paulus.
149—Third Punic war.
146—Fall and destruction of Carthage. Mummius takes Corinth.
140—Viriathus the Lusitanian assassinated.
133—Scipio reduces Numantia. Agrarian troubles in Rome. Tiberius Gracchus slain.
121—Caius Gracchus slain.
107—Marius, first consul, sent against Jugurtha of Numidia.
106—Jugurtha prisoner of Sylla. Birth of Cicero.
105—Manilius and Cæpio defeated by the Cimbri and Teutones.
102—Marius totally defeats the Teutones at Aquæ Sextiæ (Aix).
101—Cimbri routed by Marius.
100—End of the first servile war. Birth of Julius Cæsar.
90—Revolt of the Italian states.
88—Mithridatic war.
86—Death of Marius.
83—Sylla appointed dictator.
79—Sylla retires into private life.
77—Civil war of Sertorius in Spain, and of Lepidus and Catulus in Italy.
73—Mithridates routed by Lucullus.
72—Spartacus defeats 2 consuls and Qu. Arrius.
71—Defeat and death of Spartacus.

B. C.
66—Pompey defeats Mithridates.
64—Pompey at Jerusalem.
63—Death of Mithridates. Cicero consul.
62—Catiline defeated and slain at Pistoria.
60—Cæsar, Pompey, and Crassus form the first triumvirate.
58—Cæsar defeats the Helvetii.
57—Cæsar defeats the Belgæ.
56—Gaul conquered.
55—Cæsar crosses the Rhine, and invades Britain.
54—Second invasion of Britain.
53—Defeat and death of Crassus.
49—Cæsar crosses the Rubicon.
48—Battle of Pharsalia. Death of Pompey. Library of Alexandria burned.
47—Cæsar made dictator; subdues Egypt. Pharnaces slain.
46—War in Africa. Death of Cato at Utica. Carthage and Corinth rebuilt. Reform of the calendar.
45—Battle of Munda; last victory of Cæsar.
44—Cæsar assassinated.
43—Death of Cicero.
42—Battle of Philippi. Death of Brutus and Cassius.
39—Herod the Great king of Judea.
31—Battle of Actium.
30—Death of Antony and Cleopatra. Egypt a Roman province.
12—Drusus in Germany.
4—Birth of Christ.

A.D.
9—Q. Varus and his army cut to pieces by the Germans under Arminius.
14—Death of Augustus. Accession of Tiberius.
33—Crucifixion of our Saviour.
37—Caligula emperor.
41—Claudius emperor.
50—London founded by the Romans.
54—Nero emperor.
64—Rome on fire six days.
66—Rebellion of the Jews.
69—Vespasian emperor.
70—Titus captures Jerusalem.
79—Titus emperor. Pompeii and Herculaneum destroyed.
81—Domitian emperor.
98—Trajan emperor.
117—Hadrian emperor.
131—Second Jewish war.
135—The war terminated. Death of Bar Cokeba.
138—Antoninus Pius emperor.
151—Christian persecutions forbidden.
161—Marcus Aurelius emperor.
164—Christian persecutions renewed.
171—Marcus Aurelius on the banks of the Danube.
174—Victory over the Quadi.
178—Christianity preached in Britain.
180—Commodus emperor.
191—Great fire at Rome.
193—Septimus Severus emperor.
211—Caracalla emperor.
218—Heliogabalus emperor.
220—The Chinese empire divided.
222—Alexander Severus emperor.
226—Overthrow of the Parthian empire.
235—Maximin emperor.
249—Revolt of Roman legions. Decius emperor.
250—Persecution of Christians.
258—Trebizond taken by the Goths.
259—The thirty tyrants.
260—Roman army routed by Sapor, king of the Persians. China reunited by Wu-ti.
262—The Goths burn the temple of Diana. Antioch pillaged by the Persians.
269—The Goths defeated by Claudius.
270—Aurelian emperor.
273—Surrender of Palmyra; Queen Zenobia prisoner.
277—Probus defeats the Alemanni.
284—Diocletian emperor.
297—Siege of Alexandria.
303—Persecution of Christians.
305—Diocletian resigns.
306—Constantine the Great emperor.
313—Edict of Milan in favor of Christians.
325—First council of Nice.
357—Julian defeats the Alemanni at Strasbourg.
362—Julian invades Assyria.
363—Julian falls in a battle against the Persians.
375—Huns in Europe. Commencement of the great migration.
378—Valens defeated by the Goths.
379—Theodosius emperor.
395—Division of the empire. Honorius and Arcadius emperors.
402—Alaric invades Italy.
410—Rome sacked by Alaric.
425—Valentinian III. emperor

A. D.
429—Genseric in Africa.
439—Romans and Huns defeated by the
louse.
440—Vandals invade Sicily.
447—Theodosius concludes a humiliating trea
Huns.
449—Anglo-Saxons in Britain.
451—Attila invades Gaul; is defeated at
doric slain.
452—Attila invades Italy.
455—Rome plundered by the Vandals.
472—Ricimer sacks Rome.
476—Odoacer overthrows the western empire.
486—Clovis's victory at Soissons.
493—Theodoric the Great, king of the
Italy.
507—The Visigoths defeated by Clovis.
527—Justinian I. emperor of the East.
534—Belisarius conquers the Vandals in Africa.
546—Rome taken by Totila.
547—Rome retaken by Belisarius.
549—Rome again captured by Totila.
553—The kingdom of the Ostrogoths in Italy
568—Kingdom of Lombardy founded.
578—Slavonians in Greece.
591—Chosroes II. shah of Persia.
614—Damascus and Jerusalem taken by the
622—Flight of Mohammed to Medina. Era
632—Death of Mohammed.
634—Persia conquered by the Saracens.
637—Saracens take Jerusalem.
640—Alexandria taken by the Saracens.
653—Rhodes taken by the Saracens.
687—Pepin of Heristal sole mayor of the
698—Saracens storm and destroy Carthage.
710—The Mohammedans land in Spain.
712—Tarik subdues Spain.
717—Leo III. emperor of the East.
732—The Saracens defeated at Tours.
752—Pepin the Short ascends the throne of the
771—Charlemagne sole monarch.
774—Charlemagne visits Rome; subdues Lomb
of the caliph Al Mansoor.
778—Battle of Roncesvalles. Commencement
chivalry.
786—Accession of Haroun al Rashid.
787—First descent of Danes on England.
796—Saracens driven out of France.
799—Huns conquered.
800—Charlemagne emperor of the West.
803—Death of Irene, empress of the East.
809—Death of Haroun al Rashid.
814—Death of Charlemagne. Accession of Lo
bonnaire.
827—The Saxon heptarchy united under Egbe
836—Egbert succeeded by Ethelwulf.
840—Piast king of Poland.
843—Treaty of Verdun; division of the C
pire.
856—Ethelbald king of Wessex.
860—Ethelbert succeeds Ethelbald.
862—Rurik in Russia.
866—Ethelred I.
871—Accession of Alfred the Great.
872—London taken by the Danes.
870—Svatopluk in Moravia.
884—Almos elected chief of the Magyars.
886—Paris besieged by the Danes.
887—Arpad succeeds Almos.
901—Edward the Elder.
911—Conrad I. elective king of Germany.
919—Henry I. king of Germany.
925—Edward succeeded by Athelstan.
936—Otho I. king of Germany.
937—Athelstan and Edmund defeat the S
Danes.
940—Edmund succeeds Athelstan.
946—Edmund assassinated. Edred succe
955—Edwy succeeds Edred. The Magya
Lech.
959—Edgar king of Wessex and Mercia.
962—Otho I. Roman emperor.
973—Accession of Otho II. in Germany.
975—Antioch recovered from the Saracens.
975—Edward the Martyr.
978—Edward assassinated. Ethelred the Unre
983—Otho III.
987—The house of Capet in France.
994—Olaf Tryggvason, king of Norway, and
Denmark, attack London, but are
1000—Stephen I. receives the royal crown
the pope.
1001—America discovered by Biorn and L

in England. Accession of Henry

es la plund waste.
Clontarf by Brian Boroimbe. Ac-
ry III. in Germany.
le. Canute king of England.
Conrad II. in Germany.
efoot king of England.
ceeded by Hardicanute.
n line restored by Edward the Confessor.
pes deposed by Henry III.
aken by the Turks.
of Henry IV. in Germany.
Comneni on the Byzantine throne.
f England. Battle of Hastings; death
Accession of William the Conqueror.
humiliated by Pope Gregory VII. at Ca-

II. king of England.
ade.
aken by the crusaders.
taken by the crusaders. Godfrey of Bouil-
king of England.
of Henry V. in Germany.
emperor.
Norman king of Sicily.
king of England.
II. emperor.
a kingdom.
Abelard.
rusade.
of Frederic I. Barbarossa in Germany.
king of England.
tion of Thomas à Becket.
conquers Ireland.
I. defeated by the Lombards.
ugustus king of France.
conquered by Saladin.
sade. Richard I., the Lion-hearted, king of
d. Massacre of Jews in England.
I. drowned in the Calycadnus in Asia Minor.
V. succeeds.
r of Acre.
perer.
Richard the Lion-hearted. Accession of
ohn.
rusade.
pire at Constantinople.
con born.
harta signed at Runnymede.
I. king of England. Death of Innocent III.
sade.
t charter of Hungary signed by Andreas II.
Genghis Khan.
sade.
Frederic III. in the East.
proclaims a crusade against the emperor.
ars at Wahlstadt, in Silesia.
ars in Hungary. Flight of Bela IV.
crusade under Louis IX.
Mansoorah; defeat of the crusaders. Ac-
of Conrad IV. in Germany.
storms Bagdad. End of the Saracen empire.
Alexander Nevskoi of Russia.
executed in Naples by Charles of Anjou.
Louis IX. in Tunis.
I. king of England.
of Rudolph I., of Hapsburg, in Germany.
of the French in Sicily.
lost to the Christians.
glish house of commons.
emperor, but opposed by the pope.
cement of the Ottoman empire.
f Boniface VIII.
sty of Arpad in Hungary extinct.
Bruce crowned at Scone.
II. king of England.
lence of Swiss cantons. The emperor Albert
nated.
l see removed to Avignon.
aken by the knights of St. John. House of
burg in Bohemia.
Bannockburn.
ment of the Salic law.
III. king of England.
Chaucer born.
Robert Bruce.
Baliol claims the crown of Scotland, lands
army in Fife, but is defeated.
f Halidon Hill; death of the regent Douglas;
restored. Casimir the Great king of Poland.

A. D.
1342—Louis the Great king of Hungary. Great famine in China; 13,000,000 people perish.
1346—Battle of Crecy; first use of cannon by the English.
1347—Charles IV. succeeds Louis of Bavaria in Germany.
1348—Plague in Europe. Persecution of the Jews.
1356—Battle of Poitiers.
1357—Turks in Europe.
1360—Adrianople taken by Murad I.
1372—Siege of Rochelle by Du Guesclin. Death of John Palæologus.
1375—Death of Boccaccio.
1377—Richard II. king of England.
1378—Great schism of the West. Urban VI. at Rome; Clement VII. at Avignon. Wenceslas succeeds Charles IV.
1380—Timour invades Persia.
1381—Insurrection of Wat Tyler.
1385—Battle of Aljubarrota. Independence of Portugal.
1386—Timour conquers Georgia. Battle of Sempach; heroic death of Winkelried. Ladislas Jagiello king of Poland.
1388—Battle of Otterburne.
1389—Victory of Bajazet at Kossovo.
1396—Sigismund, king of Hungary, defeated by Bajazet at Nicopolis.
1397—Union of the Scandinavian states at Calmar.
1399—Henry IV. king of England.
1400—Timour invades Syria and sacks Aleppo.
1401—First burning of heretics in England.
1402—Timour invades Asia Minor. Battle of Angora; defeat of Bajazet.
1405—Death of Timour.
1409—Council of Pisa. Three popes.
1413—Henry V. king of England.
1414—Council of Constance.
1415—Battle of Agincourt. John Huss burned for heresy.
1419—Outbreak of the Hussite war.
1420—Treaty of Troyes. Discovery of Madeira.
1422—Henry VI. king of England.
1423—Constantinople besieged by Amurath II.
1428—Siege of Orleans. Joan of Arc.
1431—Joan of Arc burnt at Rouen.
1432—Council of Basel.
1437—Death of the emperor Sigismund.
1438—Albert II. succeeds in Germany, Bohemia, and Hungary.
1440—Accession of Frederic IV. in Germany. Invention of the printing press by Gutenberg.
1444—Battle of Varna; Ladislas, king of Poland and Hungary, defeated and slain by the Turks.
1446—John Hunyady governor of Hungary.
1450—Insurrection of Jack Cade.
1453—The English lose all of France, save Calais. Constantinople taken by the Turks. Fall of the Byzantine empire.
1455—The war of the white and red roses.
1456—Siege of Belgrade; Mohammed repulsed by Hunyady.
1458—Matthias Corvinus king of Hungary.
1461—Edward IV. king of England. Louis XI. king of France.
1462—Gibraltar taken from the Moors.
1471—Battles of Barnet and Tewkesbury.
1476—Battles of Granson and Murten.
1477—Charles the Bold of Burgundy falls in the battle of Nancy.
1479—Aragon and Castile united under Ferdinand and Isabella.
1480—Siege of Rhodes by the Turks; they take Otranto by storm. Birth of Sir Thomas More.
1483—Edward V. king of England. Richard III. Birth of Luther and Raphael.
1484—Inquisition in Spain.
1485—Battle of Bosworth. Accession of Henry VII.
1486—Cape of Good Hope discovered.
1492—Surrender of Granada; end of Moorish dominion in Spain. Expulsion of the Jews from Spain. Discovery of America.
1493—Second voyage of Columbus. Accession of Maximilian in Germany.
1497—Vasco da Gama doubles the cape of Good Hope.
1505—Death of Ivan of Russia.
1506—George Buchanan born.
1509—Henry VIII. king of England.
1512—Battle of Ravenna.
1513—Battle of the Spurs. Battle of Flodden Field. Balboa crosses the isthmus of Darien, and reaches the Pacific.
1515—Francis I. king of France.
1516—Charles V. king of Spain.
1517—Beginning of the reformation. Egypt conquered by the Ottomans.
1519—Accession of Charles V. in Germany.

A. D.

1520—Field of the Cloth of Gold. The city of Mexico taken by Cortes. Solyman the Magnificent sultan.

1521—Luther cited before the diet of Worms.

1522—Rhodes captured by the Turks. First voyage round the globe.

1523—Gustavus Vasa restores the independence of Sweden.

1525—Battle of Pavia.

1526—Louis II. of Hungary falls in the battle of Mohacs. House of Hapsburg in Hungary and Bohemia.

1527—Rome stormed by the army of Charles V.

1529—Siege of Vienna by the Turks.

1530—Diet and confession of Augsburg.

1531—League of Smalcald. Death of Zwingli.

1533—Pizarro in Peru. Death of Ariosto.

1534—Parliament declares Henry VIII. to be the supreme head on earth of the church of England. Ivan the Terrible czar of Russia.

1534—California discovered.

1538—Suppression of monasteries in England. Arabia conquered by the Turks.

1540—The order of Jesuits confirmed by Paul III.

1543—Death of Copernicus.

1546—Diet of Ratisbon. Death of Luther. War of the Smalcald princes.

1547—Battle of Mühlberg. John Knox preaches in Scotland. Edward VI. king of England. Death of Fiesco in Genoa. Henry II. king of France.

1551—Sir Philip Sidney born.

1552—Sir Walter Raleigh born.

1553—Mary queen of England. Edmund Spenser born.

1554—Execution of Lady Jane Grey. Treaty of Naumburg.

1555—John Rogers burnt at Smithfield, Ridley and Latimer at Oxford. Peace of Augsburg. Death of Henry d'Albret.

1556—Philip II. king of Spain. Ferdinand I. emperor.

1558—Elizabeth queen of England. Calais taken by the French. Battle of Gravelines. Death of Charles V.

1559—Peace of Cateau Cambresis.

1561—Francis Bacon born.

1562—Religious wars in France; defeat of the Huguenots at Dreux.

1564—William Shakespeare born.

1565—Siege of Malta by the Turks.

1566—Revolt of the Low Countries.

1567—Civil war renewed in France; battle of St. Denis.

1568—Counts Egmont and Horn beheaded at Brussels.

1569—Battles of Jarnac and Moncontour.

1571—The Turks take Cyprus. Battle of Lepanto.

1572—Massacre of St. Bartholomew. Extinction of the house of Jagiello in Poland.

1573—Siege of Rochelle. Alva takes Haarlem.

1574—Ben Jonson born.

1576—The Catholic league. Accession of Rudolph II. of Germany.

1579—The union of Utrecht.

1582—Correction of the calendar by Gregory XIII. The raid of Ruthven.

1584—Raleigh discovers Virginia. Prince of Orange assassinated.

1585—Philip Massinger born. Sixtus V. pope.

1587—Mary, queen of Scots, beheaded. Abbas king of Persia.

1588—Spanish armada.

1589—Assassination of Henry III. of France.

1590—Battle of Ivry.

1598—Edict of Nantes. Death of Edmund Spenser. Extinction of the house of Rurik in Russia.

1599—Tyrone's rebellion in Ireland. Birth of Oliver Cromwell.

1603—Accession of James VI. of Scotland to the crown of England.

1604—Ostend taken by Spinola.

1605—Gunpowder plot.

1606—New Holland discovered.

1607—Settlement of Jamestown, Va.

1608—John Milton born.

1609—Independence of the United Provinces.

1610—Henry IV. assassinated by Ravaillac.

1613—The house of Romanoff on the throne of Russia.

1616—Baffin's bay discovered. Death of Shakespeare and Cervantes.

1618—Sir Walter Raleigh beheaded. Commencement of the 30 years' war.

1619—Accession of Ferdinand II. in Germany. Execution of Barneveldt in Holland. Batavia built by the Dutch.

1620—Landing of the pilgrims at Plymouth. Battle of Prague.

1625—Charles I. king of England.

1626—Hampden imprisoned for resisting payment of arbitrary taxes.

1627—Richelieu besieges Rochelle. Wallenstein defeats the Protestants.

A. D.

1629—New Hampshire colonised. Charles I. dissolves
liament; some members imprisoned.

1630—Wooden railways first constructed.

1631—Capture of Magdeburg by Tilly. Tilly defeated
Gustavus Adolphus. Birth of Dryden.

1632—Battle of Lützen. Death of Gustavus Adolphus
of John Locke and Spinoza.

1633—Settlement of Maryland.

1634—Assassination of Wallenstein at Eger.

1636—Roger Williams colonizes Rhode Island.

1637—Pequod war in Connecticut.

1639—Van Tromp destroys two Spanish fleets.

1640—Independence of Portugal restored. Frederic
the Great elector of Brandenburg.

1641—Star chamber abolished. Strafford beheaded.

1642—Commencement of civil war between Charles I.
parliament. Battle of Edgehill. Tasman dis
ers Van Diemen's Land. Sir Isaac Newton b
Death of Galileo.

1644—Battle of Marston Moor.

1645—Battle of Naseby. Laud beheaded. Battle of
lingen.

1647—Revolution of Masaniello in Naples.

1648—Peace of Westphalia. End of the 30 years' war.
of the Fronde.

1649—Execution of Charles I.

1650—Settlement of North Carolina. Battle of Dunbar.

1651—Charles II. crowned at Scone. Battle of Worcest

1652—War between England and Holland. Blake defeats
Witt and De Ruyter; is surprised by Van Trom

1653—Blake's great victory over Van Tromp. Crom
dissolves the long parliament. Barebone's pa
ment. Cromwell lord protector.

1654—Abdication of Christina, queen of Sweden.

1658—Surrender of Dunkirk. Death of Oliver Crom
Accession of Leopold I.

1660—Charles II. king of England.

1664—Victory of Montecuculi over the Turks at St. Gott
in Hungary.

1665—The great plague breaks out in London. B
Harwich. New York taken from the Dutch

1666—Defeat of the Dutch at sea. Great fire in London

1668—Peace of Aix la Chapelle.

1669—Candia taken by the Turks.

1671—Execution of Zrinyi and other Hungarian cons
tors at Wiener Neustadt.

1672—Birth of Addison.

1674—Death of Milton.

1677—Death of Spinoza.

1678—Popish plot. Peace of Nimeguen.

1679—Habeas corpus act passed in England. Battle of B
well bridge.

1680—Pennsylvania colonized.

1682—Peter the Great czar.

1683—Rye-house plot. Execution of Lord William Ru
and Algernon Sidney. Siege of Vienna by
Turks, who are repulsed by John Sobieski.

1685—James II. king of England. Monmouth beheaded.
vocation of the edict of Nantes by Louis XIV.

1687—Venetians take Lepanto, Corinth, and Athens;
of the Ottoman power.

1688—The revolution in England. Birth of Alexander P

1689—English crown settled on William and Mary. B
of Killiecrankie.

1690—Battle of the Boyne.

1692—Massacre of Glencoe. Battle of La Hogue.
of Steenkerke. Namur taken by the French

1697—Peace of Ryswick. Prince Eugene defeats the
at Zenta. Charles XII. king of Sweden.

1699—Treaty of Carlovitz between the Christians and
Turks.

1700—War of the Spanish succession. Charles XII.
Narva, conquers Courland, and invades Lith
Frederic I. king of Prussia.

1702—Anne queen of England. Marlborough commander-
chief of the allied army in Flanders. Vigo
prised by the English and Dutch fleets. Prince
gene surprises Cremona.

1703—Marlborough takes Bonn, Huy, and Limburg.
imperialists defeated at Hochstadt. St. Petersb
founded. Insurrection of the Hungarians und
Rakoczy.

1704—Gibraltar taken by Sir George Rooke. Battle of B
heim.

1705—Accession of Joseph I. in Germany.

1706—Battle of Ramillies. Siege of Turin; the French
pulsed. Birth of Samuel Johnson.

1707—Legislative union of England and Scotland.
of Almanza. Siege of Toulon.

1708—Battle of Oudenarde. Siege of Lille.

1709—Battle of Malplaquet. Tournay and Mons taken
tle of Pultowa.

rounded by the Turks on the Pruth. Acces-
Charles VI. in Germany. Birth of David

Utrecht. Remains of Herculaneum discov-
ragmatic sanction.
Rastadt. George I. king of England.
tralsund. Rebellion in Scotland. The Morea
ed by the Turks. Death of Louis XIV.;
of the duke of Orleans.
II. invades Norway. Battle of Peterwar-
eath of Leibnitz.
taken by Prince Eugene.
assarovitz. Charles XII. killed at Freder-
. New Orleans founded.
on of South sea stock.
of Cambrai. Philip V. of Spain resigns the
o his son, but resumes it on his son's death.
f Hanover and Vienna. Death of Peter the

· by Spain. George II. king of Eng-

f Soissons. Discovery of Behring's straits.
eville. Birth of Oliver Goldsmith, Lessing,
delssohn.
in South Carolina. Revolt of Corsica against
oese.
sanction guaranteed.
olonized by Gen. Oglethorpe. Birth of
ton.
ugustus II., king of Poland; Augustus III.
slas Leszczynski rival kings.
of Philipsburg. The Russians and Saxons
tzic.
s to make Corsica independent.
ans take Azof, and ravage the Crimea.
dward Gibbon.
treaty of Vienna. Iron rails laid at White-

on takes Porto Bello. Treaty of Bel-
French reduce Corsica. Nadir Shah
ia, and takes Delhi.
Great king of Prussia. Accession of
resa. War of the Austrian succession.
Mollwitz. Frederic conquers Silesia.
taken by assault. Charles Albert, elector
ia, crowned king of Bohemia.
bert chosen emperor. Peace of Breslau.
ettingen. Peace of Abo.
f Charles Edward to invade England. War
France and Great Britain.
Fontenoy. Rebellion in Scotland; battle
n Pans. Death of Charles Albert. Treaty
en.
Falkirk and Culloden. The French take

st defeated off Cape Finisterre by Admiral
nd off Belleisle by Admiral Hawke. The
ake Bergen-op-Zoom. Siege of Genoa.
taken by the French. Peace of Aix la

oethe.
openhagen between Sweden and Denmark.
tyle adopted in the British dominions.
en France and Great Britain carried on in
. Braddock's defeat. Earthquake at Lis-
uito destroyed by an earthquake.
h take Minorca. Calcutta taken by Sura-
lah. Commencement of the 7 years' war.
lassey. Montcalm takes Fort William Hen-
e of Prague. Battle of Rossbach.
reveld. Louisburg and Cape Breton taken
wen and Amherst. Cherbourg taken by
ish. Siege of Olmütz.
sh take Fort Niagara, Ticonderoga, Crown
Battle of Minden. General Wolfe is killed
eights of Abraham before Quebec, having
Montcalm; Quebec surrenders. The Aus-
ke Leipsic and Dresden.
I. king of England. The French are re-
n Quebec. General Amherst takes Mon-
ge of Pondicherry. Berlin taken by the
and Russians.
y taken. Belleisle taken by Commodore

en Great Britain and Spain. The British
he French West Indies, and take Havana.
of Russia deposed and murdered in pris-
arine II. empress.
Paris and Hubertsburg, and close of the
war. France cedes Canada and other prov-
ontiac's conspiracy.

A. D.

1764—Grenville act for taxing the American colonies. Stanislas Poniatowski chosen king of Poland.

1765—American stamp act. The colonies resist. Treaty of Allahabad.

1766—Repeal of the stamp act.

1767—New taxes imposed on the American colonies. Otaheite discovered by Wallis. Spinning jenny invented by James Hargreaves.

1768—Disturbances in Boston. Corsica ceded to France. Important improvements in the steam engine made by James Watt.

1769—The Russians defeat the Turks. Birth of Napoleon Bonaparte and Wellington. Spinning frame invented by Arkwright.

1770—The Boston massacre. American resistance strengthens. All the taxes repealed, except that on tea. The Russians destroy the Turkish navy at Tchesme.

1771—Gustavus III. king of Sweden.

1772—First partition of Poland.

1773—Boston "tea party." Guatemala destroyed by an earthquake. Order of Jesuits abolished by Clement XIV.

1774—Boston port bill. First American congress meets at Philadelphia. Peace of Kainarji. Louis XVI. king of France.

1775—Battle of Lexington. Taking of Ticonderoga, Crown Point, and Whitehall. Battle of Bunker Hill. Death of Montgomery before Quebec. Washington appointed commander by the continental congress.

1776—Declaration of American independence. The British evacuate Boston. Battles of Long Island, White Plains, and Trenton.

1777—Battles of Princeton, Brandywine, and Bennington. Surrender of Gen. Burgoyne at Saratoga.

1778—Alliance with France. Battle at Valley Forge. Savannah taken by the British. Massacre of Wyoming. Surrender of Pondicherry to the British. Sandwich Islands discovered by Capt. Cook. Death of Voltaire.

1779—Norfolk burned. Loss and recovery of Stony Point. Repulse of the French and Americans from before Savannah. Paul Jones, in the Bon Homme Richard, captures the Serapis. Spain declares war against Great Britain.

1780—Surrender of Fort Moultrie. South Carolina reduced by the British. Arrival of Rochambeau at Rhode Island. Battle of Camden. Treason of Arnold. "No popery" riots in London. Hyder Ali conquers the Carnatic.

1781—Battle of Cowpens. Surrender of Cornwallis at Yorktown. Gibraltar besieged by Spain.

1782—Siege of Gibraltar. Peace of Versailles. Death of Hyder Ali, who is succeeded by Tippoo Saib.

1783—Close of the American revolutionary war. New York evacuated. Washington resigns his command. The Russians take the Crimea.

1784—Great eruption of Hecla. Tippoo Saib makes peace.

1785—Voyage of La Pérouse. Power loom invented by Edmund Cartwright.

1786—Impeachment of Warren Hastings. Death of Frederic the Great. Shays's rebellion in Massachusetts.

1787—Civil war in Holland.; the stadtholder expelled, and restored by a Prussian force. The Turks declare war against Russia and Austria.

1788—Alliance of Great Britain, Prussia, and Holland. Gustavus III. makes war on Russia.

1789—The American federal union. Washington president. French revolution. The Bastile destroyed.

1790—Indian war; defeat of Gen. Harmar. New French constitution. Belgic confederation at Brussels. Congress of Reichenbach. Ismail stormed by Suwaroff.

1791—Defeat of Gen. St. Clair. Vermont admitted into the union. Flight and arrest of Louis XVI. Convention of Pilnitz. Treaty of Sistova. Constitution of March 3 in Poland.

1792—Kentucky admitted into the union. City of Washington founded. France declares war against Austria. The Tuileries stormed. Outrages in Paris. National convention. Gustavus III. of Sweden assassinated. Francis II. emperor. Treaty of Jassy. Tippoo Saib totally defeated.

1793—Execution of Louis XVI. Reign of terror. Civil war in La Vendée. Second division of Poland.

1794—Gen. Wayne defeats the Indians. Fall of Robespierre. End of the reign of terror. Kosciuszko dictator in Poland; the Poles defeated by Suwaroff. Revolt of the blacks in St. Domingo.

1795—Pichegru conquers Holland. Peace of Basel. Final partition of Poland. Peace between France and Spain. Cotton gin invented by Eli Whitney.

A. D.

1796—End of the war in La Vendée. Italian campaign of Bonaparte. Moreau's retreat from the Danube.

1797—John Adams president. Cisalpine and Ligurian republics. Spanish fleet defeated off Cape St. Vincent. Treaty of Campo Formio. Rebellion in Ireland.

1798—Rome taken and a republic established. Expedition to Egypt. Russia and Turkey league against France. Battle of the Nile. Gen. Humbert lands in Ireland, and surrenders to Gen. Lake. Difficulty between the United States and France.

1799—Death of Washington. Siege of Acre. The English and Russians retreat from Holland. Battle of Aboukir. Bonaparte returns and becomes first consul. Death of Tippoo Saib. Conquest of Mysore. Death of Pius VI. in exile.

1800—Seat of the American government established at Washington. Napoleon crosses the Alps. Battle of Marengo.

1801—Thomas Jefferson president. Union of Great Britain and Ireland. Treaty of Luneville. Battle of Alexandria. Attack on Copenhagen by Nelson. The armed neutrality dissolved. French troops evacuate Egypt. Paul I. of Russia assassinated. Alexander I. czar.

1802—Peace of Amiens. Bonaparte consul for life. Italian republic. Ohio admitted into the union.

1803—England declares war against France, which threatens invasion. Insurrection in Ireland. St. Domingo independent. Marquis Wellesley successful in India. Louisiana purchased by the United States. War with Tripoli.

1804—Bonaparte declared emperor. First locomotive on the Merthyr Tydvil road in Wales. Death of Alexander Hamilton and Kant.

1805—Napoleon king of Italy. Battle of Trafalgar. The Battle of Austerlitz. French enter Vienna. Treaty of Presburg. Death of Schiller.

1806—The English take the cape of Good Hope. Death of William Pitt. Joseph Bonaparte king of Naples. Louis Bonaparte king of Holland. Capture of Berlin. Berlin decree. Rhenish confederacy. End of the German empire. Austrian empire.

1807—English slave trade abolished. Surrender of Copenhagen and the Danish fleet. Milan decree. Battle of Eylau and Friedland. Surrender of Dantzic. Treaty of Tilsit. Jerome Bonaparte king of Westphalia. The French invade Portugal. First steamboat on the Hudson river.

1808—Joseph Bonaparte king of Spain. Murat king of Naples. Wellesley lands in Portugal. Conference of Napoleon and Alexander at Erfurt. Napoleon enters Spain.

1809—James Madison president. Soult enters Portugal; takes Oporto. War renewed by Austria. The pope excommunicates Napoleon. Battle of Wagram. Treaty of Vienna. Battle of Talavera. Divorce of Napoleon and Josephine. Gustavus IV. Adolphus of Sweden deposed.

1810—Napoleon marries Maria Louisa. Bernadotte chosen crown prince of Sweden. Insurrection in Spanish America.

1811—Battles of Fuentes d'Onoro and Albuera. Java reduced by the British. Massacre of the Mamelukes by Mehemet Ali. Battle of Tippecanoe.

1812—War of the United States with Great Britain. Canada invaded. The Constitution takes the Guerriere; the Wasp takes the Frolic; the United States the Macedonian. Louisiana admitted into the union. Ciudad Rodrigo and Badajoz stormed. Battle of Salamanca. Napoleon invades Russia; takes Smolensk. Battle of Borodino. Burning of Moscow. Retreat of the French; passage of the Beresina. Peace of Bucharest.

1813—Battle of Lake Erie. The Hornet takes the Peacock. The Chesapeake defeated by the Shannon. The Enterprise takes the Boxer. Battle of the Thames; death of Tecumseh. The Creeks defeated by Gen. Jackson. Battles of Lützen, Bautzen, and Reichenbach. Battle of Vittoria. St. Sebastian stormed. Battles of Dresden and Leipsic. Revolution in Holland. Power loom introduced into the United States.

1814—Battles of Fort Erie, Chippewa, and Lundy's Lane. Battle of Lake Champlain. Burning of Washington. France invaded by the allies. Napoleon abdicates; embarks for Elba. Louis XVIII. enters Paris. Congress of Vienna. Holland and Belgium united. Treaty of Ghent.

1815—Battle of New Orleans. Bonaparte returns to France. Battles of Ligny, Quatre Bras, and Waterloo. Paris surrendered. Napoleon sent to St. Helena. Second treaty of Paris. Death of Robert Fulton, and Niebuhr the traveller.

A. D.

1816—Bombardment of Algiers by Lord Exm
independence in Venezuela.

1817—James Monroe president. Mississippi
the union.

1818—Congress of Aix la Chapelle. Battle of
pendence of Chili. Illinois admitted i

1819—Congress at Carlsbad. New Granada a
form the republic of Colombia, under t
of Bolivar. Alabama admitted into th
Savannah makes the first steam pass
Atlantic.

1820—George IV. king of England. Revolut
and Portugal. Florida ceded to the
by Spain. Maine admitted into the u

1821—Greek insurrection. Battles of Napoli
Thermopylæ, and Missolonghi. Co
bach. Missouri admitted into the uni
tion in Piedmont. Death of Napoleon

1822—Congress of Verona. Brazil separates f
Famine in Ireland. Defeat of Yp
Turks. Insurrection in the Morea.
emperor of Brazil.

1823—France declares war against Spain. A
invades Spain and enters Madrid.
Cadiz. Proclamation of the Mexican

1824—Burmese war; Rangoon taken. Iturbide
of Lord Byron. Death of Louis XVII

1825—John Quincy Adams president. Congres
Evacuation of Mexico by Spain. Ni
First public railway in England.

1826—War between Brazil and Buenos Ayres.
Bhurtpoor. The Spaniards evacuate
Missolonghi. Suppression of the Janiz
of Akerman. Death of John Adams
Jefferson.

1827—Battle of Navarino. France attacks Alg

1828—Don Miguel king of Portugal. War be
and Turkey.

1829—Andrew Jackson president. Catholic
Treaty of Adrianople. The Banda Ori
republic of Uruguay.

1830—William IV. king of England. Algiers
French. Revolution of July. Louis
of the French. Revolution in Belgi
tion in Poland.

1831—Negro insurrection in Jamaica. Battle
and Ostrolenka. The Russians take
suppress the revolution.

1832—Surrender of Antwerp. Don Pedro la
and proclaims Donna Maria. Ibrahim
St. Jean d'Acre, Damascus, and Antio
the grand vizier at Konieh. Presiden
toes the U. S. bank charter.

1833—Peace between Holland and Belgium.
sumes the government of Greece. P
Turkey and Egypt.

1834—Expulsion of Don Carlos and Don Migu
and Portugal. Abolition of slavery
West Indies. Insurrection of the
cape of Good Hope.

1835—Attempt of Fieschi to assassinate Louis
in Algeria with Abd el Kader. Carlist
Great fire in New York. Ferdinand
Austria.

1836—Constitution of 1812 in Spain.

1837—Martin Van Buren president. Access
Victoria. Insurrection in Canada.
line burned. The banks in the Unit
pend specie payments.

1838—War between France and Mexico. Ste
Western arrives at New York from B

1839—Commencement of hostilities between
and China. Peace between France
Defeat of the Turks at Nezib.

1840—Marriage of Queen Victoria and Prince
British take Sidon, Beyrout, and St.
The remains of Napoleon I. deposited
des Invalides.

1841—William Henry Harrison president; di
succeeded by John Tyler. Union of
das proclaimed at Montreal. Trial an
McLeod.

1842—Treaty between the United States and
by which the north-eastern boundary
Peace between Great Britain and Chi
tion in and bombardment of Barcel
water introduced into New York.

1843—Sir Charles Napier defeats the Ameers of
ture of Hyderabad. "Rebecca riots" in
lior taken by the British. Death of Ro
and Hahnemann.

1844—Riots in Philadelphia. Peace between

Morocco. Tangier and Mogadore bombarded. Electric telegraph between Washington and Baltimore.

James K. Polk president. Iowa and Florida admitted into the union. Annexation of Texas. Mexico de- es war against the United States. War in Al- a. Revolt of Yucatan from Mexico. Sikh war India.

icans defeated at Palo Alto and Resaca de la Palma Gen. Taylor. Storming of Monterey. Wisconsin admitted into the union. Treaty with Great Britain settles the north-western boundary. Sewing machine invented.

Battle of Buena Vista. Vera Cruz taken by Gen. Scott. Battles of Cerro Gordo, Contreras, Churubusco, and Molino del Rey. Storming of Chapultepec, and capture of the city of Mexico. Famine in Ireland. Capture of the Bogue forts. Surrender of Abd el Kader. Kossuth elected to the diet of Presburg.

e between the United States and Mexico. Revo- ion in France; flight of Louis Philippe. Insur- ions at Berlin, Milan, Venice, Madrid, Vienna, gue, Frankfort, Rome. Schleswig and Holstein are their independence of Denmark. Rebellion d. Messina bombarded. Hungarian war. s defeated before Mooltan. Gold discovered nia.

ylor president. Riot in Montreal. Astor e riot in New York. Storming of Mooltan. Austrians enter Buda-Pesth. The Hungarian rnment at Debreczin. Battle of Kapolna. Russians in Transylvania. Hermannstadt taken by Bem. Independence of Hungary declared. Kossuth governor. Comorn relieved. Buda taken by Görgey. Russians under Paskevitch in Hungary. Bem and Dembinski defeated. Surrender of Görgey and of Comorn. Count Batthyanyi and 13 generals executed. Rome declared a republic; is taken by the French under Gen. Oudinot. Charles Albert de- d by Radetzky. Surrender of Venice.

l Fillmore president. California admitted into union. An expedition under Lopez lands in a. Treaty at Munich between Austria, Bava- Saxony, and Würtemberg. The Schleswig- steiners defeated at Idstedt by the Danes. Trea- Olmütz. Death of William Wordsworth and ert Peel.

exhibition at London. Kossuth visits Amer- Lopez invades Cuba; is executed. Caffre war at cape of Good Hope. Earthquakes at Valpa- and Melfi. Great fires at San Francisco and Hong Kong. Yacht America gains the cup at the Cowes regatta. Louis Napoleon dissolves the national assembly and overthrows the constitution.

angoon destroyed by the British, who annex Pegu. Louis Napoleon emperor. United States expedition to Japan. Vera Cruz blockaded. Defeat of Rosas at Santos Lugares. The allied army enters Buenos Ayres. Telegraph cable laid between England and Ireland. Death of Henry Clay, of the duke of Wellington, and of Daniel Webster.

ranklin Pierce president. Revolution in Mexico. Exhibition in New York. Insurrection in Rebellion in China. Riot in Montreal d by the preaching of Father Gavazzi. Martin Koszta, seized by an Austrian force at Smyrna, is surrendered on demand of Capt. Ingraham. The Porte declares war against Russia. Conference of Great Britain, France, Austria, and Prussia, at Vienna. The Russians defeated at Oltenitza. Destruction of the Turkish fleet at Sinope. Russians repulsed from Kalafat.

reat Britain, France, and Turkey form an alliance against Russia. The gulf of Finland blockaded. Bombardment and capture of Bomarsund. Russians invest Silistria. Bombardment of Odessa. Siege of Silistria. Battle of the Alma. Siege of Sebastopol. Battles of Balaklava and Inkermann. Insurrection in Spain. Treaty between the United States and Japan. The Peruvian ship Mercedes strikes a rock near Callao and founders with the loss of 781 men. Earthquake at Florence. Loss of the Collins steamer Arctic; 332 perish. The immaculate conception of the Virgin Mary proclaimed as a dogma of the Roman Catholic faith.

onference at Vienna. Sardinia joins the alliance against Russia. Death of the emperor Nicholas. Telegraphic cable laid in the Black sea. Kertch taken. Battle of the Tchernaya. Fall of Sebastopol. Surrender of Kars. Gen. Castilla defeats Pres. Echénique and enters Lima. Completion of the Panama railroad. Eruption of Vesuvius. Gen. Walker with 150 men defeats Gen. Mandiola at Virgin bay.

A. D.

1856—Treaty of peace between the belligerent powers signed at Paris. Chilian war steamer Cazador with 314 persons lost. Earthquakes at San Francisco, in Egypt, Syria, and along the Mediterranean; great loss of life in Candia, Rhodes, and Cyprus, and in one of the Molucca islands. Coronation of Alexander II. emperor of Russia at Moscow. War between Costa Rica and Nicaragua. Col. Schlesinger with 500 men defeated by the Costa Ricans under Gen. Mora. Gen. Walker attacks the Costa Ricans, who hold Rivas; they leave the city. Insurrection in Madrid.

1857—James Buchanan president. Feb. 14—Treaty for the abolition of the sound dues. Feb. 16—Death of Elisha Kent Kane, the Arctic explorer. March 11—New constitution promulgated in Mexico. April 9—A Californian expedition to Sonora surrender after 8 days' fighting in Cavorca, and the whole number (84) shot. April 20—Gen. Vivanco attacks Callao, but is repulsed. April 26—Earthquake at Mouch, near Erzeroum. May 1—Gen. Walker agrees with Capt. Davis of the U. S. frigate St. Mary's to leave Nicaragua and surrender Rivas. May 9—Eighty-five men of the cavalry corps, Meerut, India, sentenced to imprisonment for refusing to handle greased cartridges. May 10—Mutiny of the native troops at Meerut. They commit horrible barbarities; march to Delhi and proclaim the king sovereign of India. June 26—Steamer Montreal burned; 259 lost. Aug. 7—The Atlantic telegraph fleet leaves Valentia bay. Aug. 11—The cable breaks after 335 miles had been paid out. Aug. 20—Earthquake in Peru. Aug. 24—The Ohio life and trust company suspend payment; commencement of great commercial embarrassments. Sept. 10—Loss of the Russian war ship Lefort, with 818 persons. Sept. 12—Loss of the Central America, and over 400 lives. Sept. 14-20—The British assault and take Delhi. Sept. 25—Meeting of the emperors of Russia and France in Stuttgart. Oct. 13—New York city banks suspend specie payments. Financial panic throughout Europe. Oct. 28—Death of Gen. Cavaignac. Dec. 6—Com. Paulding of the Wabash takes Walker and his army prisoners. Dec. 16—Earthquake in the kingdom of Naples; 15,000 to 40,000 lives lost. Dec. 28—Canton bombarded by the English and French.

1858—Jan. 7—Death of Reshid Pasha. Jan. 11—Revolutionary movements in Mexico; Comonfort resigns. Jan. 14—Attempt to assassinate Napoleon III.; Orsini, Rudio, Gomez, and Pierri arrested. Jan. 15—Imperial ukase appointing a committee to consider the abolition of serfdom in Russia. Jan. 25—Marriage of the princess royal of England and Prince Frederic William of Prussia. Jan. 31—Launch of the Leviathan steamship. Feb. 20—Lord Derby prime minister of England on the resignation of Lord Palmerston. Feb. 21—Corinth destroyed by an earthquake. March 15—Insurrection in Venezuela; Monagas resigns. Mar. 19—The English take Lucknow April 17—Martin Bernard, accused of conspiring to assassinate Louis Napoleon, acquitted at London. May 1—Costa Rica and Nicaragua appeal to the European powers for protection against American fillibusters. May 11—Minnesota admitted into the union. May 15—Dr. Livingstone floats the steam launch MaRobert on the waters of the Zambesi river. May 19—The British and French capture the Pei-ho forts. May 27—Great eruption of Vesuvius. June 7—U. S. peace commissioners reach Salt Lake City. June 10—Second attempt to lay the Atlantic telegraph cable. June 15—Massacre of Christians at Jiddah. June 19—Earthquake in Mexico. June 26—U. S. troops pass through Salt Lake City. July—Treaty of peace between Great Britain and China, and France and China. July 26—Baron Rothschild, the first Jew admitted into the house of commons. July 28—American treaty with Japan. Aug.—Great explosion at Okhta, near St. Petersburg; 100 killed. Aug. 2—Colony of British Columbia constituted. Aug. 5—Successful laying of the Atlantic telegraph cable. Aug. 19—Great fire at Astrakan. Aug. 26—English treaty with Japan. Sept. 1-2—Quarantine buildings on Staten Island, N. Y., burned. Sept. 13—Burning of the iron steamer Austria; about 500 perish. Oct. 5—Burning of the New York crystal palace. Oct. 7—The prince of Prussia, regent. Oct. 9—First overland mail from California arrives at St. Louis. Donati's comet nearest the earth. Oct. 15—The city of Mexico unsuccessfully attacked by Gen. Blanco. Nov. 24—Count Montalembert sentenced to 6 months' imprisonment and 3,000 francs fine for praising the institutions of England and reflecting upon those of France.

CHRONOMETER, a watch of accurate workmanship, with self-adjusting compensations. The escapement varies from that of ordinary watches; but the great peculiarity is the construction of the balance-wheel, which is of different metals, so adjusted that it performs equally well under every variation of temperature. It is hence used in astronomical observations by sea and by land, and is especially valuable in determining longitude at sea. The difference of time in two places is evidently equal to the difference of longitude expressed in time. The chronometer is set to mark the time at Greenwich, Washington, or Paris; the navigator, by an observation of the heavenly bodies, determining the time at his ship and comparing it with his chronometer, discovers the longitude of his ship. The first experiment with a chronometer was made in 1665, in a voyage to the coast of Guinea, by Major Holmes, with a watch made by Huyghens. With this, the longitude of the island of Fogo was obtained with tolerable precision. In 1714 Sully published a work on finding the longitude at sea by means of chronometers. Julian de Roy was his scholar; and the son of this latter and M. Berthoud still further developed the art. In 1726 Mr. Harrison produced a chronometer, the error of which did not amount to one second in the space of 10 years. In 1736 it was sent to Lisbon, and corrected the reckoning on the voyage as much as a degree and a half. Thus encouraged, he made successively three chronometers, which were completed in 1739, 1758, and 1761; the last being so excellent that the government offered to send it on a voyage to the West Indies. The island of Jamaica was fixed on, and his son embarked in 1761 with the chronometer; and on his arrival, the longitude shown by it did not differ from that obtained by astronomical observation more than 1¼ minutes. Among those who have done most toward bringing these instruments to perfection are Kendall, Arnold, Mudge, Earnshaw, and the late Mr. Dent of London. The use of chronometers was very slow in becoming general. In Lord Howe's fleet in June, 1794, there was not a single chronometer; and in our navy but very few were used until 1832. The first chronometer used between the United States and Europe by an American vessel is supposed to have been on board the packet ship Pacific in 1816; but now, few if any vessels, bound any distance from the land, go without them. Chronometers of very superior quality are now made in the United States.

CHRYSALIS, a name generally limited to the 2d stage of the growth of lepidopterous insects, or to the pupa from a caterpillar, because, as the term implies, they are sometimes gilt or ornamented with golden spots; aurelia is synonymous with chrysalis. When the limbs are not covered, the term nymph is applied to insects in this stage, more especially when the grubs eat; and the word pupa is properly employed for those which entirely lose the larva form, take no food, and remain
bound up like a swathed mummy.
alis, like all pupæ which undergo
metamorphosis, is motionless and d
On a close examination, traces of th
its organs, the wings, and the legs, n
closely pressed to the body and adher
a kind of varnish. Some are angul
ered with protuberances, but most
and spindle-shaped. The manner in
perfect insect comes out has been
when speaking of BUTTERFLY, whe
mentioned their various modes of
Most are contained in a cocoon, f
exit is easy for the insect by the dis
the threads at one end. Those of
flies are uncovered and fixed by th
portion, and usually open in a few
in others the chrysalis state lasts t
winter, either in the open air, unde
holes in walls and trees, or in silke
Some of the social caterpillars rem
pany in the chrysalis state, each con
cocoon at the end of their last nest.
useful of these cocoons is that of the
but other caterpillars form coveri
markable in shape and presuppos
intelligence in the makers. As in t
stages of the metamorphosis, the chr
on the back to give exit to the perfe

CHRYSEÏS, the daughter of Chrys
of Apollo, fell prisoner to the Greeks
jan war, and became the portion of
non. When he refused to restore th
at the request of her father, Apollo
the prayer of his priest, and sent by
pestilence and death into the Greek
memnon found himself obliged to y
maiden, but then robbed Achilles of t
seïs. Hence arose the dissension bet
heroes which so long delayed the c
Troy, and with which the story of the

CHRYSIPPUS, a Greek philosop
Stoic school, born at Soli, or as oth
at Tarsus in Cilicia, about 280 B. C.,
It appears that, after having lost a lar
he went to Athens, where he becam
of the Stoic Cleanthes, perhaps of
self, but at the same time diligently
arguments of the Sceptics against the
trines. His acuteness in argument o
him the designation of "the sword f
of academicians." In his philosophi
he followed closely in the steps of
whose doctrines he seems to have ma
It is stated that he was the author of
Only a few fragments of them have
served.—The most elaborate essays
sippus and his philosophy are B
(*Chrysippi Vita, Doctrina, et Reliquia*
1822), and Chr. Petersen's *Philosop*
sippi Fundamenta (Hamburg and Alt

CHRYSOBERYL (Gr. χρυσος,
βηρυλλος, beryl), a gem, also called c
(κυμα, wave, and φαινω, to appear),
from a peculiar opalescence it someti

curs in crystals derived from the rec-
rism. It is of vitreous lustre, speci-
y 3.5–3.8, and hardness 8.5. The
e transparent or translucent, and of
s of green, colored by oxide of iron
imes probably by chrome. The finest
t crystals are cut with facets, and are
n and highly prized by the name of
rysolite or oriental topaz. If opales-
are usually cut *en cabochon*, and
brilliant are of little value. The
of nearly 80 per cent. of alu-
glucina; a small proportion of
on is usually present. It is found in
Ceylon, in rolled pebbles among allu-
; in the Ural, associated with beryl
: in Haddam, Connecticut, in gran-
t, beryl, &c. It also occurs in
near Saratoga in New York.

ITE (Gr. χρυσος, gold, and λιθος,
named from its color, a variety of the
ing in transparent crystals, usually
color, but sometimes black. They
to be of any value as gems.

RASE, a variety of chalcedony, of
green shade, colored by nickel.

ORAS, MANUEL, a learned Greek
tinople, the first who revived the study
literature in Italy after the middle
about the middle of the 14th century,
ice, April 15, 1415. The eastern
in danger of overthrow by Baja-
peror Manuel Palæologus sent
about 1389 as ambassador to the
wers to solicit aid against the Turks.
ting Italy, France, and England,
duced in 1395 to become a pub-
of Greek at Florence. He passed
various Italian universities, and was
tor of several early Hellenists, among
nardi Bruni, Poggio, and Guarino of
His *Erotemata*, an introduction to
mar, was the first and long the only
a knowledge of that language, save
tion; and it was several times reprint-
e grammars of Gaza and Lascaris had
into use. He enjoyed a high repu-
eloquence and theological learning,
yed by Gregory XII. in negotiations
he reunion of the Greek and Latin
as attempted, and in 1413 accompa-
John XXII. to the council of Con-
ere he died.—His nephew, JOHN
s (died 1462), followed him to Italy,
nes been confounded with him.

OM, JOHN, doctor, bishop, and
e eastern church, born in Antioch,
to some, in A. D. 344, while some
355, but according to the most sat-
count it was Jan. 14, 347; he died
. His father, who held command
erial army in Syria, died when he
child, and his mother Anthusa devo-
for his sake to perpetual widowhood.
e was a Christian, and intended to
on as a Christian, she allowed him to
frequent the school of the pagan Libanius, who supported at Antioch the plans of Julian for reviving the old religion. The young John speedily became a favorite pupil, and his master predicted his eminence as an orator. Libanius also bore testimony to the character of Anthusa. "What women these Christians have," was his exclamation. John's first intention was to be an advocate, but when he was about 18 years of age he took on the garb and the temper of penitence, was baptized by Meletius the bishop, and was ordained as reader in the episcopal house. Three years were passed in this religious retirement, out from which the young Christian came back only to satisfy the entreaties of his mother, disconsolate at the loss of his society. In 374, about 3 years after the death of his mother, John retired into the mountain region above Antioch to try the austerities of hermit life. He became an enthusiast in this form of piety, and of the 6 years which he gave to it, two were spent in a cave, in the most rigorous seclusion and self-denial. Failing health sent him back to the city, where he earned the title which has become his surname, of "Chrysostom," or the "golden-mouthed." He wrote against the heretics and preached against the pagans, restored Arians to the Catholic communion, moderated the excesses of zealots, and gave himself especially to the suppression of the vices which disgraced the Christian not less than the heathen population of that corrupt city. He labored with more energy than success to extinguish the bitter schism between Flavian and Paulinus, the orthodox and the Eustathian party. His persuasion had more influence in calming the fury of the populace, when they rose in revolt against the exactions of the emperor. It was Chrysostom's good fortune to announce to that multitude the first news of the pardon which Theodosius had granted to the prayers of their venerable bishop. This occasion was the climax of the preacher's fame in the city of his nativity; and after this there was no bound to his popularity and his influence.—In A. D. 397, the dignity of bishop of Constantinople was conferred upon the reluctant Chrysostom. It was soon ascertained that he was not merely an eloquent orator, but also a vigorous reformer, and that the wicked, in any station, might not hope for escape from his bold invective. To restrain tyranny, to adjust social inequalities, to arrest luxury, to put down all show in dress, in equipage, and in style of living, to succor the needy, to purify worship, to convert the church of that profligate royal residence from its pagan tastes, this was the work to which he now devoted himself. He introduced a new system in the order of the ecclesiastical life, bringing it back to a semi-monastic simplicity. He gave in his own person and house the example of decent frugality; and the revenues which formerly supported the retinue and state of the bishop's palace, he applied to the building of hospitals and the care of the sick. The empress Eudoxia, whose favor was as disgraceful as her enmity was for-

midable, was especially the mark of his brave reproof; and if he did not call her by name, the sure instinct of the people applied to her case his analogies and his rebukes. The emperor, though secretly annoyed by the uncompromising spirit of his religious adviser, yielded to his demands. Eutropius, in disgrace and a fugitive, found an asylum in the church, and a defender in the prelate. Through Chrysostom's influence, too, Gainas the Goth, the foe of Arcadius, was converted, disarmed, and persuaded to withdraw his forces from the imperial city. Missionary bishops went at Chrysostom's order to the Gothic people, to Persia, and even to the nomadic Scythians. With the mass of the people, the love for Chrysostom never waned; but in the year 403 Theophilus of Alexandria, with a retinue of bishops, crossed the sea, and gathered in the suburbs of the city, under the imperial sanction, a council of prelates to the number of 36, or, as some say, of 45, and summoned Chrysostom as a criminal and a heretic. Chrysostom refused to appear at this illegal council, which, therefore, proceeded in his absence to hear and consider the grounds of accusation. Several of these were at once dismissed as too frivolous for notice, and others were expunged as improbable. Twelve charges were alleged and argued. They said that he called his clergy by hard names, that he suspended them without cause, that he occasionally chastised them, and that his whole course of dealing with his inferiors was arbitrary and violent. They accused him, meagre and pale as he was, of gluttony and impurity. They affirmed that he was mean in his hospitalities and fraudulent in his use of the episcopal revenues; that he had baptized pagans on insufficient evidence of conversion; that he had shunned the fellowship of such orthodox prelates as Epiphanius and Acacius; and that he had apologized for Origen, and warmly pleaded the cause of that learned heresiarch. He was deposed; the old priest Arcades received, as reward for his false witness, the vacant chair; and the condemned bishop was hurried away by night to Prænetum in Bithynia, the appointed place for his exile. The indignation of the people was quick and intense. They refused to hear the man who would defend such an outrage. The soldiers brought into the city could not quiet the spirit of rebellion. The alarm of the superstitious empress at this demonstration of popular wrath was heightened by an earthquake which shook the walls of the palace. An order was sent for Chrysostom's recall; apologies were offered; the people could not wait for the sentence to be legally cancelled; and the banished convict returned in triumph to the altar of his church, and resumed with fresh energy his fearless work. His triumph, however, was of short duration. He dared again to brave the wrath of the empress, and the words which he spoke concerning her silver statue and the games in its honor were too contemptuous to be passed in silence. A new council was summoned; and, although

Chrysostom had within it a strong
bering 42, his adversaries took ad
legal quibble, and argued that a
had no right to his seat unless he
instated by a synod. The influe
sostom's presence could not sav
sentence was reaffirmed; a coll
the imperial troops and his par
some deaths occurred, helped to
cause; appeals to the Roman pontifi
return except ineffectual remonstran
which was called to decide the m
vented from assembling; and after
took final and sorrowful leave of hi
the faithful in the city. It was in
week of the year 404, nearly 7 ye
had been transferred from Antioc
resting place was the not distant
where he remained for several we
which broke out shortly after
destroying, along with the great cu
of the finest public buildings of Co
was attributed to the vengeance of
and the decree went forth to remo
tom to Cucusus, a village of the Ar
rus. His long journey through
severe as it was for one so old and
borne with patience, and fatigues
not prevent his mind and his
playing their activity. His r
Armenian region lasted for abou
ken by an assault of the Isaurians,
pelled him to take temporary refu
tant castle of Arabissus. In this pe
up a various and extensive corresp
ercised episcopal functions in send
sionaries and receiving addresses,
honor, if he had not the power,
One more remove was decreed for
the summer of 407 the officers c
duct him to the desolate region of t
to the village of Pytius, which had
as the place of his final banishmen
was long, and the marches of the
forced. They were exposed to
violent rains, and the worn frame
gave way under these trials more
rit under the insults of one at le
ductors. At Comana in Cappado
compelled to rest, the forces of the
ing quite failed. He had just stre
himself to the shrine of Basiliscus
a few miles further. By night the
peared to him in a vision, forewarn
near death; and the next day he clo
with white garments, ejaculated a
expired upon the tomb of Basilisc
60 years old, but prematurely worn
and sufferings. His funeral was
great company of monks, nuns, an
from all the surrounding country.
later, his memory was revered bot
ern and western churches, and in t
his remains were borne with
Constantinople, and the emperor
itent to pray at the shrine of the

yred. His festival is kept
u on Jan. 27, by the Greek
v. 13.—In person, Chrysostom
and remarkable only for the
voice and the light in his eye.
of the ancient church gained
of h consummate oratory. His
and could suit itself to every
every theme; but his favorite
questions of practical duty. He
in rebuking sin than in ex-
d His homilies abound in
parisons, which prove at
his fancy, the accuracy of
the extent of his learning.
of ornament is the most striking
of his style. He loved a direct
searching appeals. His invectives
more vehement than his real feeling,
torrent of rhetorical passion
away from his better judgment. He
constitution hasty and irritable, and
bear contradiction. His orthodoxy,
onable, was moderate, and his
the Nicene symbol did not make
to the Arian party. He was well
Scriptures, and borrowed from the
most affluently and felicitously.
reproached in modern times for
much of good works and exalting
h.—The works of Chrysostom are
several complete editions have been
one in 1612 in 8 vols. folio; another
8, in 12 vols. folio; and another,
of the Benedictines, in 13 vols. folio
A more complete edition was pub-
–'40, in 13 vols. 4to., by MM.
Some of his most striking pas-
nslated in Villemain's *Tableau de*
chrétienne au 4me siècle. Most of
are homilies and commentaries.
contains what he wrote and said
lms; another contains his observa-
Prophets. The Gospel of Mat-
el of John, the Acts and Epistle to
and the Minor Epistles of Paul,
heir volume. The productions of
early life, his discussions of virgin-
state, the duties of the priest-
y interesting as pictures of life
Syria. His most important re-
contained in the 2d and 3d volumes,
rics, his apologies, his sermons in
his vindication of the miracles
of St. Babylas, and his remark-
of letters to the widow Olym-
hful friend in adversity as in pros-
these 13 volumes there is an ad-
minute analysis in Alban Butler's
the Saints." Portions of Chrysos-
have been translated into most of
languages, and extracts from them
he text books of the schools of mod-
Chrysostom has been compared
iter and preacher with Ambrose, Minu-
elix, and Lactantius, in the ancient church; with Bossuet, Fénelon, Melanchthon, and Jeremy Taylor in the modern church; but in some qualities of oratory none of these are his rivals. His reputation as a Christian orator is as unique as the reputation of the pagan Demosthenes. Of the many biographies of Chrysostom, the most interesting to the general reader is perhaps that of Neander, the last edition of which was published at Berlin in 1848.

CHRZANOWSKI, Adalbert, a Polish general, born in 1788 in the palatinate of Cracow, of an ancient family, whose name belongs to the most glorious in Polish history. He took a part in Napoleon's campaign against Russia (1812), and fought at Leipsic (1813), under the walls of Paris (1814), and at Waterloo (1815). After the fall of Napoleon he took service in the national army of Poland, at that time reorganized as a kingdom by the emperor Alexander I., accompanied Gen. d'Auvray on his expedition to determine the boundary line between Russia and Prussia, and served under Diebitsch in Turkey (1828–'29). Having been made lieutenant-colonel, he was at Warsaw when the Polish revolution of Nov. 29, 1830, broke out. Adhering to the provisional government, he was appointed commander of the fortress of Modlin, Jan. 1831, and subsequently chief of Skrzynecki's staff. He distinguished himself by his defence of the line of the Wieprz (April), by his victory at Kock (May) over Gen. Thiemann, by his successful operations in Podlachia against Rüdiger, as well as by his retreat to and from Zamosc, whence he carried victoriously a large park of artillery to the capital. Having been made general of brigade, he was further promoted to the rank of general of division after the victory of Minsk (July 14); but an interview held with Gen. Thiemann, the object of which was not divulged, roused a strong suspicion against him, which was strengthened by his continued opposition to strong measures, and by the inactivity of Skrzynecki, who followed his suggestions. But in spite of the violent attacks of the clubs, and his freely uttered misgivings as to the final success of the struggle, he maintained his command, and after the events of the night of Aug. 15 was appointed governor of Warsaw under Krukowiecki. His behavior, however, during the storming of Warsaw, when he was said to have checked the rush of the national guards to the ramparts, and his staying in the conquered capital, which he was allowed to leave afterward with a Russian passport, seemed to confirm the accusations of the patriots. After his arrival at Brussels a formal protest was sent to the Belgian government from the Polish organization in Paris against his reception as a Polish refugee. In 1849, after a lapse of 18 years spent in obscurity, he was chosen by Charles Albert of Sardinia as commander-in-chief, though only with the rank of lieutenant-general, in his second war against Austria. His arrangements, which made Novara and the highway to Milan the centre of operations, and neglected the lines of the Ticino and Po, whose defence was intrusted to 6,000 undisciplined Lombards under Ramorino, the disturbing influence of the patriotic clubs, the unexpectedly bold advance of Radetzky, who crossed the Po at Pavia and cut off the corps of Ramorino, combined to produce the disaster of Novara (March 23), which terminated the short campaign and the political career of Charles Albert. Several mistakes and words of Chrzanowski were again construed to prove him a traitor, but only Ramorino died, probably unjustly, as such, while Chrzanowski was allowed by the Sardinian government to justify his course in a long report, and to return to Paris.

CHUAPA, a river of Chili, rises on the W. slope of the Andes, forms the S. boundary of the province of Coquimbo, and after a course of 125 m. enters the Pacific.

CHUB, or CHEVIN (*leuciscus cephalus*, Flem.), a common fresh-water fish, of the same family with the carp. It is very abundant in almost all the slow-running, soft, clear streams of England; and sufficiently plentiful, of a kindred although distinct species, in similar waters of the United States. In all modern languages, this fish takes his name from the head, which is certainly of somewhat inordinate size. In old English he is called cop, in French *testard*, and in Italian *capitome*. He considerably resembles the carp in form, but is longer and scarcely so thick. The body is oblong, rather round, and of a pretty equal thickness in the greater part of the slope. The scales are large; the irides silvery; the cheeks of the same color; the head and back of a deep dusky green; the sides silvery, but in summer yellow; the belly white; the pectoral fins of a pale yellow; the ventral and anal fins red; the tail forked, of a brownish hue, but tinged with blue at the end. It is altogether a handsome fish. It is said that it will sometimes weigh up to 5 lbs., but such a weight is most unusual; as, while the average does not certainly exceed half a pound, a chub of 2 lbs. weight would be considered a very heavy fish. The flesh of the chub is of but little esteem, being coarse and full of small hairy bones. The roe is, however, excellent; and the head and throat are the best parts, being moderately gelatinous. If stewed with wine and spice, it may be made tolerably good eating; but in truth it is not worth the price of the condiments which will be required to cook it, as it is not only coarse, but soft, watery, and of no particular flavor. The haunts of the chub are in rivers whose bottoms are of sand or clay, or which are bounded by clayey banks; particularly in deep holes, shaded by trees, weeds, &c. They frequently float on the surface, and are sometimes found in streams and deep waters where the currents are strong; in ponds fed by rivulets they grow to a large size. They spawn in April, and are in the best condition in December and January. They afford little sport to the angler, though they will bite freely at the worm, the gentle, the grasshopper, and the natural or artificial fly; for, when once hooked,
their mouths are so tough and le
hook is certain to keep its hold, whne
so little pluck or spirit that he will
self to be pulled out by main force.
is a shy and wary fish, and is affect
slightest movement of the water, o
shadow of any thing fleeting over it,
a flying bird or a waving bough;
this reason, he is a good fish for young
to commence their practice on, in thr
fly softly and gingerly, without pro
break on the surface, and in fishin
the sun, so as to avoid casting the s
the rod or line across the lighted stre

CHUBB, THOMAS, an English t
writer, born in East Harnham, in 167
Salisbury, Feb. 8, 1747. His parents w
and his father followed the business
ster. He received but little education,
barely read and write when he was ap
to a leather glove and breeches ma
afterward learned the business of a tal
dler, and followed it in Salisbury durin
his life. Having by diligent applicati
ed a good stock of general knowl
delighting especially in theological i
organized a society for religious imp
whose exercises at first were confined
the Scriptures in connection with s
commentary. By degrees a spirit of fr
sion prevailed. About that time the lit
religious world was thrown into agi
the controversy between Clarke and
on the Trinity, the immediate occasion
was the publication of Whiston's "
Christianity" (1710). The member
Salisbury club invited Chubb to writ
on the subject. The result was th
tion, under the supervision of Wh
had become interested in Chubb,
macy of the Father asserted," whic
plied to by Trinitarian controversiali
Chubb rejoined in "Supremacy of t
vindicated." He denied the vicari
ing of Christ, and the divine aut
the positive institutions of Christia
yet maintained that Jesus was sent
a moral instructor, and regularly w
in his parish church until his deat
included in Leland's "View of the
Writers in England." Pope's opinion
as expressed to Gay, was highly comm
"Have you seen," said he, "or conve
Chubb, the wonderful phenomenon
shire?" Sir Joseph Jekyl, master of
appointed him steward of his hous
don, an office which Chubb found
genial to himself as amusing to his ad
who made sport of his short fat f
his powdered tie-wig presiding at hi
sideboard. He therefore soon re
returned to making and selling cand
bury. He was always poor, and
used to give him his cast-off clothes
the above-mentioned works, he was t
of many writings, among which were

eason as a Sufficient Guide in Mat-
igion," and an "Inquiry about the
of the New Testament." His style
and yet argumentative, and his tem-
discussion.

ITO, Chucuyto, or Chuquito, a
ru, capital of a province of its own
e department of Puno; pop. of the
bout 75,000, and of the town 5,000.
n the W. bank of Lake Titicaca, at
of a stream which rises in the
urrounded by remarkable remains of
ich in cattle and mines of gold and
has manufactories of *ponchos*, car-
pestry, and dyeing establishments.

EIGH, a market town of Devonshire,
m. S. W. of Exeter, situated on a
he left bank of the Teign; pop. in
. It was almost destroyed by fire
d has since been rebuilt. It contains
several chapels, an endowed gram-
, national schools, and various chari-
famous for its cider, and once had
ies of woollens. In the vicinity are
le and limestone, and some
stone rocks, with curious cav-
popular superstition of Devon-
out as the abode of the "pixies"
-Also a village and castle on the W.
ake Peipus, in the government of
ussia. The castle is said to have
by one of a body of emigrants from
hose descendants still own property
ra.

-PEE, a fortified port of China. It
an island opposite Ty-cock-tao
on river, 35 m. S. E. of Canton,
by the British in 1841. At the
squadron of Chinese war junks was
yed in Anson's bay, a little N. of

CANAS, a town in Peru, in the de-
f Libertad, near the boundary of
oted for the remains of ancient Peru-
ings, examined by Humboldt and
a portion of the road of the incas,
ends along the table-lands of the
m Quito through Chulucanas and
principal seat of the incas, to La
Chuquisaca, the present capital of
rough 20° of latitude. This road is
l of solid porphyry or freestone, cut
masses, and is still nearly perfect in
. Through the entire extent of this
pears from remains, it was once for-
rong buildings, which were for some
the palaces of the incas by travel-
e now generally considered to have
for the protection of the territory
. and E. Chulucanas is 8,943 feet
sea level.

A, a town of the Punjaub, situated on
river, at the foot of the Himalaya
. It is the residence of a rajah, and
an important commercial place.

UL, a large river of Hindostan, rises in the N. slope of the Vindhya mountains, flows N. for some distance, then N. E., and finally joins the Jumna, about 90 m. S. E. of Agra. Its total course is estimated to be 570 m. Beside other streams, it receives the rivers Sind and Parbuttee, and it is, during a large part of its course, the boundary between the Rajpoot provinces and Gwalior.

CHUNAR, or Chunargurh, one of the principal invalid stations for European troops in British India, a town and fortress in the district of Mirzapoor, 437 m. N. W. from Calcutta; lat. 25° 5′ N., long. 83° E.; pop. 11,058. It is a place of considerable strength, possesses a small citadel and extensive magazines; and the fort is built on a solid rock which rises abruptly and projects into the river. On the heights, a number of large round stones are kept ready to be thrown down on assailants. The church missionary society has a church embellished with a Gothic steeple. There is also a chapel for the use of soldiers of the Roman Catholic persuasion. In 1768 the fort, with its territory, was ceded to the E. I. company, and was for some time the principal military depot for the N. W. provinces. During the sultry season the intense heat renders the place ill adapted for a sanitarium. Outside of the town is the tomb of Kaseem Solyman, and of his son, who are reputed as saints by the Mussulmans.

CHUND, or Chand, a celebrated Hindoo poet, of the Rajpoot tribe, who flourished in the 12th century. He wrote a poem, which is said to contain 100,000 stanzas, in which he alludes to, or treats of, almost all branches of knowledge, and gives a sort of general history of his nation during the period in which he lived, celebrating the exploits of almost all the Rajpoot nobles, and especially of Prithwiraja, the last Hindoo king of Delhi. The poems of Chund are still very popular among the Rajpoots. Col. Tod, who is almost the only authority on this subject, published an account of the life and writings of Chund in the first volume of the "Transactions of the Royal Asiatic Society," in which he gives some translations from these poems.

CHUPRAH, the principal town of the British district of Sarun, presidency of Bengal, on the left bank of a channel of the Ganges, on the route from Dinapore to Goruckpore, 24 m. from the former and 124 m. from the latter, and about 34 m. W. N. W. from Patna; lat. 25° 45′ N., lon. 84° 48′ E.; pop. about 50,000. It has a considerable trade in cotton, sugar, and saltpetre, with Dinapore, Patna, Benares, Calcutta, and other ports on the river. With the exception of the places of worship and the dwellings of the *mahajans*, or wealthy native merchants, the houses are built of mud, with tiled roofs. The town has little breadth, but extends a mile along the river. It is only a few feet above the level of the river, which is separated from the mainland by a swampy island, and is navigable during the rains, but inaccessible from October to July.

CHUQUISACA, or Charcas, a department of Bolivia, area 29,183 sq. m.; pop. in 1855, 180,000. It extends over the mountainous country between the rivers Paspaya and Rio Grande de la Plata, contains important mines, and is noted for its fertility and for its salubrious climate.—The principal town, Chuquisaca, or Sucre, is the capital of Bolivia; pop. in 1855, 19,200. It is the seat of an archbishopric, and contains a cathedral and palace, situated on a square adorned with a fountain, also various churches, the university of St. Xavier, a college of arts and sciences, mining academy, convents, a hospital, and charitable institutions. The town is delightfully situated; the houses are well built and surrounded by gardens. In the vicinity, particularly along the banks of the Cachimayo, are fine villas. Water is scarce but good, and there are many public fountains. The city was founded by one of Pizarro's officers in 1539, on the site of the old Peruvian town Choque Chaka (bridge of gold). Afterward it was called La Plata, on account of the adjacent silver mines; but the original Peruvian name was finally restored.

CHUR, or Coire (Romanish *Cuera*, the *Curia Rhætorum* of the Romans), the capital of the Swiss canton of Grisons (*Graubündten*), the place of meeting of the council of the Grisons, the depot of the goods transported to Italy over the Splugen and Bernardin passes, occupies a picturesque site on the river Plessur, about 2 m. from its confluence with the Rhine; pop. 6,200. The town is the seat of a bishopric (the oldest in Switzerland), and has several churches and convents, an episcopal palace, a town hall containing a public library, a lyceum, several seminaries and schools, 2 orphan asylums, a hospital, and manufactories of glass, cotton, zinc plates, and cutlery. A "Description of the Cathedral of Chur" was published in Zürich in 1857. The Roman Catholic church, outside the city gates, is remarkable from its extreme antiquity. The Romanish, a dialect of the Latin, is still spoken in this vicinity, and a Romanish newspaper is published here. Angelica Kauffman was born there.

CHURCH (Gr. *κυριακον*, consecrated to the Lord; Saxon, *kyrck;* Scandinavian, *kirku;* Slavic, *cerkicu;* Scotch, *kirk;* the common root in these forms did not pass into the Romanic languages, but from the New Testament term *εκκλησια*, a congregation, sprang the Span. *iglesia*, the Fr. *église*, &c.), in its most general sense, the whole collective body of Christians. Its narrower senses are, a body of Christians, adopting one creed, and organized under the same ecclesiastical government, as the Anglican church; the Christians of a particular province or city, as the church of Antioch; or a society organized for worship in the same edifice. In the Scriptures the name is also given to the body of Jewish believers, the Jewish church being composed of all those who followed the law of Moses. The Christian church is the society of those who profess the religion of Jesus Christ. The society of the faithful upon earth is usu-
ally called the church militant, and
of the saints in heaven is called
triumphant. In the New Testam
is once applied to a single fami
tians. (See Christianity.)—Chri
always given the appellation chu
edifices designed for public worship
cient churches had an *atrium*, or
surrounded with walls, before the e
the centre of this there was a foun
all washed their hands or faces
ing the church, as an emblem of th
soul which they should possess.
door there was a covered court, t
which was supported by columns; i
placed the first class of penitents,
called *flentes*. In the interior, the
church near the door was called th
in this the catechumens and the
who were called *audientes*, were pla
came the nave, the lower part of
occupied by the penitents called
trati; while the laity were arrange
on one side and the females on the
remainder of the nave. In the cen
ambon, or pulpit, large enough to c
eral persons, who acted as chanters.
was separated from the nave by
rails; in this were situated the altar
of the bishop, and the seats of t
it terminated in a semicircle, it
apsis. A curtain drawn round
cealed it from the view of the ca
and from those who were unbelie
the time of the divine mysteries. (
tecture and Cathedral.)

CHURCH, Benjamin, an Americ
the early Indian wars, born at Duxl
in 1639, died at Little Compton, Ja
He was exposed from childhood to
the Indians, with whom, in King P
he had several severe skirmishe
which was in a swamp near Bridge
in Aug. 1676, he commanded the part
Philip was killed. Commissioned
commander-in-chief of an expedition
eastern Indians, he proceeded up the
visited the forts in that vicinity,
Casco for a time. He made 4 other
against the Indians in Maine, once
Maquoit, and thence going to P
in Brunswick, once again going u
bec, and twice ascending the
Passamaquoddy, and doing much
French and Indians on these rivers.
direction and from his minutes his
wrote a history of Philip's war;
in 1716; last edition, with no
Drake, in 1846.

CHURCH, Benjamin, an Ameri
suspected of treason in the revolu
was graduated at Harvard college in
talents made him prominent in B
physician and whig politician, but
habits involved him in pecuniary
ment, and at the outbreak of the

committee of safety at Cam-
detected in treasonable corre-
Gov. Gage. He eloquently
for the liberties of America,
cuniary relief was the motive
but he was condemned by a
expelled from the house of repre-
which he was a member, sen-
and debarred the use of pen,
He was released in 1776, and
bark for the West Indies, but the
h he sailed was never afterward
The 1st volume of the "Massa-
orical Collections" has an account
ion and defence.

EASTERN. See GREEK CHURCH.

H, FATHERS OF THE (*patres ecclesias-*
Roman Catholic view, those Chris-
and writers, from the 2d to the
who were eminent for their or-
ius, and beneficent influence upon
They were preceded by the apos-
include several of the scholastic
tants usually limit the title to
ical writers who lived between
centuries. That department of
y which embraces the life, writ-
of the church fathers is
patrology, and is both curi-
with reference to exegesis,
church history. The most distin-
Greek fathers, reckoned by Pro-
Ire Clement of Alexandria,
yril of Alexandria, Basil
y of Nazianzus, Eusebius of Cæ-
om, and Theodoret; of the Latin
Martyr, Tertullian, Lactantius, Cy-
of Poitiers, Ambrose, Augustine,
Gregory the Great. The Roman Ca-
e from this list Tertullian, Origen,
on account of the heterodoxy of
ir works, but add to it John of Da-
ian, Anselm, Bernard, Thomas
ventura, and others of the early me-
The Gallican church desig-
the last of the fathers. Most of
writings have been several times
, and the careful Benedictine
esteemed among the best. Of
collections, the most important are
Bibliotheca Vetera Patrum (27 vols.,
77; it contains the Greek fathers
translation, and valuable notices of
heologians); the *Bibliotheca Veterum*
Antiquorum Scriptorum Ecclesiasti-
allandii (14 vols., Venice, 1765–'81);
ogiæ Cursus Completus, by the abbé
most extensive of all collections, in
ols., Paris, 1840 *et seq.*); and the *Pa-*
Bibliotheca, by Cardinal Mai (con-
materials discovered in the MSS. of
, Rome, 1853 *et seq.*). Collections
were made by Grabe (Oxford, 1698),
psic, 1776–'86), Guillon (Paris, 1833–
hilo (Leipsic, 1853–'54). Among the
o patristic studies are Möhler's *Pa-*
trologie (Ratisbon, 1839–'40), Engelhardt's *Leitfaden zu patristischen Vorlesungen* (Erlangen, 1822), and Charpentier's *Etudes sur les pères de l'église* (Paris, 1853). A "Library of Translations from the Fathers" has recently been published in England, chiefly under the editorial care of Dr. Pusey.

CHURCH, FREDERIC EDWIN, an American landscape painter, born at Hartford, Conn., in May, 1826. He was a pupil of Thomas Cole for some years previous to the death of the latter. Among the works which first brought him into notice was a view of East Rock, in the vicinity of New Haven, in which accuracy of drawing and great mechanical dexterity were found to be combined with a vivid appreciation of the beauties of nature. After increasing his reputation by further representations of American scenery, he went in 1853 to South America, the striking physical aspects of which he reproduced on his return in a series of pictures. His views of the great mountain chains of New Granada were among the first exhibited in this country, and the glow of color with which they were suffused, and the nice elaboration bestowed upon every object, attracted to them a large share of attention at the exhibition of the New York academy of design in the succeeding spring. Mr. Church made a second visit to South America in 1857, and brought back with him a number of sketches, upon one of which, a landscape of great size and merit, he is now (1858) engaged. In 1857 he painted a large view of Niagara Falls, which has enhanced his reputation more than any other work. It is an oblong, about 7 feet by 3, representing the Horseshoe Fall, as seen from the Canadian shore near Table Rock, and has been pronounced both in this country and in England, where it was extensively exhibited and admired, the best representation of the falls ever painted. Ruskin bestowed upon it the highest praise; and, to use the words of the English critics, in the rush of the waters and the fine atmospheric effects, it realized the idea of sound as well as of motion. This picture has done more than any other of its class to impress Europeans with a knowledge and appreciation of American art. Mr. Church has for the last few years been a resident of New York.

CHURCH, JOHN HUBBARD, D.D., an American clergyman, born in Rutland, Mass., March 17, 1772, died at Pelham, N. H., June 13, 1840. He graduated at Harvard college in 1797, and was for nearly 40 years pastor of the Congregational church of Pelham. He was principally distinguished for his devotion to benevolent enterprises. For 20 years he was officially connected with the missionary society, and for a like term with Dartmouth college. The American tract society, the N. H. Bible and missionary societies, and the Andover theological seminary and the Phillips academy, also received his official coöperation for many years, and each of these enterprises drew not only on his large judgment and untiring zeal, but his slender purse, which, replenished by but a meagre salary, submitted to an annual levy for the charitable purposes of these various institutions as long as he lived. He published about 25 sermons, beside various articles in religious periodicals.

CHURCH, Sir Richard, a commander in the Greek war of independence, born in England in 1780, entered the army in 1800. Having spent many years in the British and Neapolitan service, and held, in 1813, the command of a Greek infantry corps, he joined the Greeks in their struggle for independence, and his arrival in Greece (March, 1827) strengthened the hopes of the patriots. He was appointed commander-in-chief of the Greek forces, and ordered by the national assembly of Trœzene to march to the relief of Athens. His attempt to raise the siege failed, partly from want of prudence, partly from the dissensions which sprang up among the Greek chieftains. Church, being a foreigner, had many personal opponents, who seized this opportunity to disparage his efforts and even his sincerity. Subsequently he endeavored to effect a union of the factions at Napoli de Romania, and not succeeding in this, he marched with a body of Roumeliotes to the isthmus of Corinth. His object was to cut off the retreat of the Turkish troops in the Morea, and, aided by Lord Cochrane, to attack the western coast. He was in this position at the period of the battle of Navarino. In Nov. he embarked with 5,000 men for Diagomestra, in Acarnania. Capo d'Istrias sent a part of the Greek fleet into the gulf of Ambracia with reënforcements. Reshid Pasha now found himself compelled by the desertion of several Albanian chiefs to retreat. On April 24 Church made himself master of Poro, an outpost of Missolonghi. The return of Reshid Pasha, with 3,000 men, prevented him from availing himself of his new position. Reshid Pasha was gradually obliged to withdraw his troops from the various posts, which fell into the hands of the patriots in 1829, and the capitulation of Missolonghi followed, which emancipated western Greece. Sir Richard now repaired to Ægina, but the personal enmity and jealousy of Capo d'Istrias compelled him to resign; and by active opposition to the measures of that statesman he made himself so obnoxious that he was ordered to quit Greece, an order which he treated with contempt. After the assassination of Capo d'Istrias Sir Richard continued his opposition to the administration of Augustin Capo d'Istrias, who had succeeded his brother in the Greek presidency. King Otho appointed him a councillor of state.

CHURCH, Roman Catholic. See Roman Catholic Church.

CHURCH, Samuel, LL.D., a jurist and statesman of Connecticut, born in Salisbury in Feb. 1785, died Sept. 12, 1854. He graduated at Yale college in 1803, and, having studied law, returned to Salisbury. He was from 1818 almost constantly in some official station in the state or judiciary. He was a member of the general assembly first in 1818, and 5 times thereafter;
state senator 5 years; judge of probate 11
judge of the superior court in 1833, and
justice in 1847, an office which he retain
til his death.

CHURCH, States of the. See
States.

CHURCH OF ENGLAND. See
Church of.

CHURCH RATE, a tax imposed up
inhabitants of a parish in England for chu
pairs. It is occasionally termed a church
in Ireland previous to its abolition it
church cess. The rate is levied by
wardens of the parish, together with the
ioners, assembled upon public notice gi
the church. The levy is made upon the
in respect of the land or house he may
By the civil and canon law each pastor is
ed to attend to the repairs of his church,
is customary in England to throw this
upon the parishioners themselves. It wa
ished in Ireland in 1823. In England
ment has always met more or less
since the 17th century, especially
society of Friends. Of late years it h
the subject of frequent discussion in the
parliament. In many parishes, especi
those included in the great cities, the
of the vestry were averse to granting
quired rate, on the ground that it was u
tax members of one religious denomina
the support of houses of worship used
other denomination. The church party
ed they had a right to levy the rate, i
of the popular will. The question wa
before the ecclesiastical and civil courts
in the Braintree church rate case,
various phases, occupied the legal p
from 1837 to 1853. The expenses of t
ous litigation on both sides were bor
national subscription. It was ultimat
cided by the house of lords that the
wardens and the minority of a vestry
make a legal rate against the will of the
ity. This decision greatly encouraged
forts of the party opposed to church ra
the cases in which parishes have b
for and against the rate have greatly
since then. The frequency of thes
and the ill feeling engendered by them i
the house of commons to pass a bill to
church rates unconditionally, but the h
lords refused its assent to this me
large majority (1858). The total am
by church rates in 1832 was £446,4
1854, £318,200.

CHURCH WARDENS, parish officers
duty it is to attend to the repairs of the
the arrangement of pews and seats, and t
paration of all things necessary for the
celebration of the service. They are r
to maintain order during time of publi
ship, and to present to the bishop all thi
lating to the church, clergyman, or parish
which are presentable by ecclesi
The mode of their appointment is

d by the charter of each parish. In
they are elected by the parishion-
ers appointed by the minister, in
ain by both jointly, and in case the
nd people cannot agree upon a choice,
ormer names one warden and the lat-
another. There are usually two in
h. though there may be but one. In
h wardens are *ex officio* overseers
By the common law they were
o hold in trust for the church, as
body, personal property only, but
of George III. they are permitted
real estate also.

HILL, called also MISSINNIPPI and
ER, a river of British America, rises
y, flows S. E. through Lakes Buf-
Crosse, runs thence almost due E.
s lake, and after traversing a woody
expanding into considerable sheets
nishes its course of 700 m. by falling
bay.

LL, CHARLES, an English poet,
estminster in Feb. 1731, died in Bou-
. 1764. At the age of 17, although
ithout any means of subsistence, he
his father, a curate and lecturer at
took him and his wife into his
pported them on condition of his
clerical profession. In 1756 he
by Bishop Sherlock, and having
acy in Somersetshire, was af-
d into a small country prefer-
onged to his father. In 1758, on
his father, he succeeded to his
ing this period he was exemplary
ct, although he himself declares
doing violence to his own feel-
at he was but an idle pastor and
eacher. Differences with his wife,
debts, and finally the evil example
friend, the poet Robert Lloyd, a
olmate, plunged Churchill into all
and irregularities of the town.
aved from incarceration by the
sition of his friend's father, Dr.
r in Westminster school. The first
shed was the "Rosciad," a satire
cal world of the day. The crit-
this performance drew out the
Apology to the Critical Reviewers," in
ed the wits as he had the players.
sociated himself with Wilkes, and
ly for the "North Briton." The
Famine," a satire on Scotchmen,
ainst the Bute administration, com-
ed Churchill's fame. He was in-
he famous proceedings against the
riton," in which Wilkes defended the
f the subject against the stretch of
rogative. He wrote the "Duellist,"
hor," "Gotham," the "Candidate,"
well," and the "Times." He died at
while on a visit to his friend Wilkes,
uried at Dover. "No English poet,"
y, "had ever enjoyed so excessive and so short-lived a popularity; and indeed no one seems more thoroughly to have understood his own powers; there is no indication in any of his pieces that he could have done any thing better than the thing he did." His complete works were published in 1804.

CHURCHILL, JOHN, duke of Marlborough, a British general, born June 24, 1650, at Ashe, in Devonshire, died June 16, 1722. He was the son of Sir Winston Churchill, a royalist of some note, who procured for him the place of page to the duke of York, shortly after the restoration, his sister Arabella being appointed maid of honor to the duchess. He was a favorite with the duke from the first, and was by him made an ensign in the guards at the age of 16. He served at Tangier, and in the auxiliary force which Charles II. sent to aid the French in their attack on Holland, where in 1672 he attracted the attention and received the praise of Turenne. Even at that time he gave proof of his wonderful military capacity, and he was fortunate in serving under the ablest of living generals. Louis XIV. made him a colonel, and the duke of York gave him high appointments in his household. He owed his advancement as much to his sister's influence as to his own merits, she being the duke of York's mistress. He was engaged in not a few of those intrigues of gallantry which were so common at the court, and is said to have jumped from the window of the chamber of the duchess of Cleveland, one of the most noted of the king's mistresses, to avoid the king. The lady rewarded him by the present of £5,000, with which he purchased an annuity of £500 a year. Even in his youth he was noted for an economy that much resembled avarice. In 1678 he married Sarah Jennings, a young woman of good family, but poor. The marriage was unquestionably one of affection on his side, as he refused in her favor the hand of an opulent girl. Sarah was then as vixenish as in after days, when her tongue and temper affected the destinies of great nations, and seems to have annoyed her lover much. This marriage was probably as eventful a one as ever was made by parties beneath royal rank. The first effect of it was to make Churchill's life regular. He received military promotion, and was employed in various ways both by the king and the duke. Accompanying the latter to Scotland, he nearly lost his life by shipwreck, his master's affection alone standing between him and death. He was made Lord Churchill in the peerage of Scotland in 1683; and the same year, on the marriage of the princess Anne with Prince George of Denmark, Lady Churchill was made chief lady of her bedchamber, an appointment that was to have singular consequences. The ladies had been friends for some time, on the principle of joining contrasts, for no two persons could be more unlike; the princess being as dull, heavy, and yielding as the baroness was lively, changeable, and imperious. The most wonderful of friendships resulted; and the princess was the first to propose that

their intercourse should be divested of form and ceremony. They corresponded, when unavoidably separated, under the names of Morley and Freeman, names of the mistress's invention, the servant selecting that of Freeman because, according to herself, it accorded most with her frank temper. The influence thus established lasted for about a quarter of a century, and would have ended only with Anne's life if the servant had known how to govern her own fierce feelings. On the duke of York becoming James II., Churchill was made general, and ambassador to France. On the invasion by the duke of Monmouth, he was prominent in his military services; the victory of Sedgemoor was due to him, and he was rewarded for it, and had previously been made Baron Churchill of Sandridge, the latter being the name of his wife's birthplace. He was not conspicuous during the reign of James II., and was opposed to the policy of that prince. His intellect was too clear not to enable him to see that the king's course was leading to destruction, and even Macaulay declares that Churchill was a sincere member of the English church. But his opposition was not of a demonstrative character, and down to the last moment he enjoyed the king's confidence. The influence of his wife over Anne was used with effect to keep the princess opposed to her father's policy, and in 1687 Churchill wrote to William of Orange to that effect, and also placing himself at William's command. On the landing of William, Churchill was made a lieutenant-general, and appointed to an important command, though he was suspected by Feversham, who urged his arrest in vain. He induced Lord Cornbury to join William, and soon followed him, accompanied by several military men, and by the duke of Grafton. His example was followed by Prince George of Denmark, while Lady Churchill found no difficulty in persuading Anne to leave London, and to join the northern insurgents. The influence of the Churchills on Anne's mind was favorably employed to induce her to waive her superior claim to the throne over William. For this the baron received valuable appointments, and was made earl of Marlborough. In the subsequent disputes between William and Anne he sided with the latter. He was sent in 1689 to command the British forces in Flanders, and repulsed the French at Walcourt. The next year he led an army to Ireland, and took Cork and Kinsale. He early began a correspondence with the exiled king, and completely deceived him. His object was not to aid James, but to overthrow William III., place Anne at the head of the nation, and rule her and England through his wife. In 1692 he was dismissed from his employments, and sent to the tower, where he remained for some time. He sent to James an account of the expedition against Brest, which enabled the French to defeat the English with great slaughter, one of his objects being to ruin Talmash, a military rival, who lost his life on the occasion. After the death of Queen Mary, Marlborough
was restored to favor, and made
the duke of Gloucester, Anne's
was, however, no love between
the earl, the latter behaving off
eral occasions. In 1701 he was
command the forces in Holland,
sador to that country, war with
at hand. He was very successful
matist, and the king, who anticipa
speedy end, recommended him to
most competent to advise and comm
Anne became queen-regnant, Marl
made captain-general and master of t
and a knight of the garter. Lady
received several valuable appointm
royal household, and two of her da
made ladies of the bedchamber.
ambassador to Holland, he compl
rangements for the declaration of
France. Through the influence of
was appointed generalissimo of th
the grand alliance, when he en
surprising career of victory.
successes, the campaign of Blenhei
in the summer of 1704, and on t
August was won the battle of
which proved fatal to the plans of
The French and Bavarian arm
hilated. Marlborough had pre
made a duke, and now the manor a
Woodstock were conferred upon h
queen ordered that a palace sho
built, to be called Blenheim. He
ful in the operations of 1705, w
made a prince of the empire by
emperor, who conferred upon him
of Mindelheim, with the title of
battle of Ramillies was won Ma
Other successes marked this cam
duke received a pension of £5,000,
duchess, and other rewards. The
1707 was marked by no striking
Marlborough commanded; but
1708, he won the battle of Oudenar
taken the same year. Efforts to
having failed, the war was resum
Sept. 11, 1709, Marlborough won t
Malplaquet, the most sanguinary
contested of all his victories, and
them; for though he commanded i
campaigns, the French did not ven
him again in a pitched battle. H
career continued, and many places
the French were captured. In the
great changes had taken place in Eu
war had been commenced by a
try, though it was to support
Gradually every thing changed. T
Godolphin, became a whig, and the
passed into whig hands. In 1707
was complete, though the queen's
were with the tories. The duchess
rough, who was a whig at the time
was a tory, bent all her energies to
of the ministry, and it is probable
tact had equalled her talent, that mi

the queen's life. But the
weary of that imperious
once found delight, and
a. Freeman were enemies.
ced a poor relative, named
in the queen's service, and this
the f actor in the downfall of
the tool of Robert Har-
was married to Mr. Ma-
contempt in which she was held
er to become powerful, as her purpose
e were not early suspected. There
struggle, and the duchess was
prosecution of Sacheverell brought
o a crisis, and the duchess was com-
give up all her places, and she did not
ith any philosophy on the occasion.
f Godolphin in 1710, and the triumph
was followed in 1712 by the removal
from all his offices. He had
ailed by political and personal
belief that was so common in his
lity, and avarice, was but too
by his previous career. It was
ed to proceed against him legally.
from the command of the allied
been followed by a change in the
he war favorable to the French. He
a check in his career of conquest,
he would have entered Paris
century earlier than it was entered
During his 10 successive cam-
been victorious on all occasions,
of the very few generals who
wn the sensation caused by de-
nt ceased to pay the cost of
m, and that palace was com-
the funds of the duke. The Ger-
treated him with equal in-
principality had been lost
restoration of the elector of Ba-
English government would not use
o cause the emperor to grant him
, and all was lost. At the close
left England, and visited Flanders
many, residing principally at Aix la
Frankfort, and Antwerp. The ill
e had received from the tories caused
me a firm friend of the Hanoverian
He corresponded with the elector,
him a large loan, while he prepared
k for England at the head of a body of
the death of Queen Anne. So much
electoral family pleased, that a blank
n was given him, intrusting him
chief command when its head should
be British throne. He used his influ-
h Holland in behalf of the Protestant
n. Marlborough returned to England
day of the accession of the house
er. He was well received by the
nd by the nobility and the army. He
d a privy councillor, and on the
George I. was made captain-general
and master of the ordnance. Three
law were appointed to high offices.

He was very prompt in his measures during the rebellion of 1715, and the rebels were overthrown on the very spot which he had predicted would be fatal to them. Yet it is charged against him that he sent money to the pretender, so that the rebellion was in part his work. This was the last of his acts of any consequence. His health was on the decline, and he experienced more than one paralytic shock. Still his mental powers were not affected, the poet's assertion that "streams of dotage" flowed from his eyes being utterly without foundation. He attended parliament even in the last year of his life, and performed also his various military duties. He offered to resign his offices, but the king would not hear of it. He engaged in the South sea speculation, and made therein £100,000, but this is said to have been owing to his wife's advice. The duchess was suspected of favoring the pretender, and though she defended herself vehemently against this absurd suspicion, her success was small, and she went into opposition. The duke was seized with palsy in June, 1722, at Windsor lodge, and died in full possession of his faculties on the 16th, only 8 days before the completion of his 72d year. He had a magnificent funeral, and his body was deposited in Westminster abbey, whence it was removed to Blenheim, and placed in a noble mausoleum, the work of Rysbrach. The duke left no son, and his title passed to his eldest daughter, Henrietta, countess of Godolphin. He left enormous wealth, his income at the time of his death being £70,000, exclusive of what he drew from royal gifts. He was one of the ablest of statesmen, and it was as much owing to his excellent temper, and to his general ability, as to his military skill, that he was able so long to remain at the head of the grand alliance, and to mould to his purpose materials so little susceptible of easy handling as German potentates and Dutch politicians. His avarice was inordinate, and was founded on a sordid love of money for its own sake, as he did not accumulate to scatter. He was not cruel, but he was without feeling or moral sense.—The duchess, who was 10 years her husband's junior, survived him more than 22 years. Though there is much exaggeration in the ordinary accounts of her violence and quarrels, it is undeniable that her life was not of that dignified character which would have been so becoming in one who had been so great, and who was so famous. She was involved in disputes with some of her relatives, most of whom were inferior creatures. Much that was unpleasing in her conduct proceeded from her abhorrence of cant and duplicity. She could be liberal, and there was something imperial in her manner of aiding Child the banker, whom the bank of England was seeking to ruin, when she gave him an order on that institution for £100,000. She gave Hooke £5,000 for assisting to write her "Account" of her conduct while at court. Two offers of marriage were made to her—one by Lord Coningsby, and the other by that duke of Somerset who is known as "the proud," but whose pride could not prevent him from seeking the hand of a woman of 63 because it was full of gold. The duchess died Oct. 18, 1744, in her 85th year, her birth having occurred on May 29, 1660. Her immense wealth was left principally to Charles, duke of Marlborough, and to his brother, John Spencer. Among her bequests was one of £20,000 to Lord Chesterfield, and another of £10,000 to William Pitt. —The biography of Marlborough has often been written, the most complete work of the kind being that by Archdeacon Coxe, published in 1818, and which was composed from original materials. One of the latest works on his life is that by Sir A. Alison, the historian. Marlborough is one of the principal characters in Macaulay's "History of England," where he is painted in the same dark colors that the historian employed when writing of him in the "Edinburgh Review," 30 years ago. In 1845, the "Letters and Despatches of the Duke of Marlborough" were published in London. They form 5 octavo volumes, and were edited in a very useful manner by Sir George Murray, himself a soldier of distinction, and of respectable rank in statesmanship. They afford ample means for the completion of an extended life of the most successful of soldiers, and were liberally used by Alison; but the biography of Marlborough is yet to be written, considered with reference to his political character, and the great part he played in some of the mightiest of events. An interesting "Life of the Duchess of Marlborough," and one to be depended upon, was written by Mrs. A. T. Thomson, and published in London, 1839, in 2 vols. 8vo.; the author being a lady whose historical writings have thrown considerable light on many curious portions of British history. A good account of the duchess is to be found in the 4th volume of Miss Costello's "Eminent Englishwomen." She, too, is a prominent character in Macaulay's "History," and the historian, not content with speaking of her admitted failings, appears inclined to impugn her character for chastity, by attaching importance to the scandal that represented her as the mistress of the accomplished Shrewsbury.

CHURCHILL, Sylvester, inspector-general of the U. S. army, born in Woodstock, Vt., Aug. 2, 1783, received his education in the schools of that vicinity, and in 1808 became publisher in Windsor of a weekly newspaper, called the "Vermont Republican," and continued in that position till 1812, during which time the politics of the state were changed from federal to democratic, mainly through the instrumentality of his journal. In March, 1812, he was appointed 1st lieutenant in the 3d artillery, declining a captaincy in the infantry. A company, recruited by himself, and, during the greater part of the period of his connection with it, under his sole command, gained a high reputation for discipline and efficiency, in the exercises and manœuvres of field, or as it is now sometimes termed, of light artillery. With this company he served
under Gen. Dearborn, and subs
summer of 1813, constructed
near Burlington, Vt., a parape
a battery of 13 heavy guns, an
protection to Com. McDonough's
crippled by a storm and other
it anchored under this shelter f
while in this condition was
British fleet. Having bec
motion, he served under Gen. W
and performed the duty of or
the Chateaugay campaign. Soo
appointed assistant inspector-ge
rank of major, in which capacity
the close of the war. He was w
kinson in the attack on La Coll
quently was in the staff of Gen.
Gen. Macomb. During the long
for the army from 1815 till the
of the difficulty with the Creeks
Capt. Churchill was stationed at
on the northern frontier and the
and for 4 years prior to 1828 was
service at Alleghany arsenal, near
1835 he was promoted to the rank
the 3d artillery. In 1836 the Cr
commenced, when he was ordered
and subsequently to Florida, where
for the most part till 1841. Dur
portion of this time he held the
ing inspector-general, and was
ployed with troops, and in muster
and discharge volunteers and mili
Georgia, and Alabama. Th
performed with such judgment
to cause the paymaster-general to
not one dollar had been lost to his
by erroneous organization, and
thanks of the secretary of war.
so ably accomplished caused him t
for the position of inspector-gener
rank of colonel, in June, 1841, in
Gen. Wool, promoted, a position wh
active, constant, and arduous servic
act of 1842, designed for another
dent Polk in 1845 judged it his
but one inspector-general in the
Col. Churchill was disbanded f
with acknowledgments of his
vices. On the reassembling of
ever, this constructive injustice was
a unanimous vote, and Col. Churc
stored to his place and rank. I
being engaged in mustering vol
West, he joined Gen. Wool, on the
of the latter, and accompanied him
campaign in Mexico. More than
of the command was composed
Col. Churchill's duties required
and cause to be corrected all i
the part of the troops, and at
lance and strictness occasioned
hostility, but in the end the v
warmly attached to him. In the
na Vista, while he was actively
ing troops, his horse received

; and in the absence of the general rom a part of the field, after the flight Indiana regiment, he ordered such a the position of the Illinois regiment, d by Col. Bissell, while under a heavy save that gallant corps from capture, nable it by veteran firmness to hold its until reënforced, and thus secure the . For his distinguished and meritorious in this battle Col. Churchill was made neral by brevet. Returning from was employed for many months in troops out of service, and then re- ed his tours of inspection, travelling a year till 1856, when confirmed lame- d him from that arduous and respon- ice.—Gen. Churchill married, Aug. daughter of the Hon. William Windsor, Vt., a lady of great intel- and moral endowments. Their eldest LLIAM H., brevet captain in the 3d artil- ated at West Point in 1840, com- with distinguished bravery the heavy in the battle of Palo Alto, and died at Isabel in 1847, greatly lamented.

RCHMAN, WILLIAM H., a blind man, ent of several institutions for the in- blind, born in Baltimore, Md., in ted as a pupil of the Pennsylvania or the blind in Sept. 1836, he rapidly a good mathematical education, and considerable proficiency in music. , he engaged in teaching music in , and in 1840 became an assistant and other branches in the Ohio the blind at Columbus. In 1844 ointed principal of the Tennessee in- or the blind, then in its infancy. He re- 2 years' service, in consequence of ill in 1847 was chosen superintendent of a institution for the blind at Indian- which he presided with great ability , when he resigned. The ensuing blished a young ladies' seminary , Ind., which, after a little more year of successful progress, was broken the destruction of the buildings by fire. ived soon after the appointment of su- ndent of the Wisconsin institute for the at Janesville, Wis., where he now resides.

RN, the vessel in which cream is agi- o break up the buttery globules and sep- hem, in the solid mass called butter, the fluid portions. This being a very mechanical operation, it would seem e apparatus for conducting it could ad- no great diversity of form, or present a r the exercise of much ingenuity. It fore, surprising that so many vari- these machines have been contrived, complete description of them would the arrangement of the subject into divisions; as: 1, those in which, the containing the fluid being at rest, the r dasher is moved up and down in ; this includes the simple old-fashioned cylindrical churn, with its straight rod projecting through the cover and attached below to the cross making the dasher; 2, those in which the agitators are made to revolve upon an axis placed horizontally in the vessel at rest; 3, those in which they revolve upon a vertical axis; 4, those in which the vessel containing the fluid revolves; 5, those in which air is introduced to expedite the operation by its mechanical action; and 6, the various other contrivances which may not be included in either of the above divisions.—Churns of the first division have been made double by a late French patent of M. Rennes. A grooved pulley is set upon a horizontal axis between the 2 rods of the dashers; each rod fits so closely in the groove, one on each side of the pulley, that as this is turned half round and back, the dashers are carried up and down alternately. This motion is given by turning round the crank of another axle (attached advantageously to a fly wheel), which crank is connected by a rod to the lower end of a bar attached to the pulley, and extended below it. The complete rotation of the crank thus gives an alternating partial revolution to the pulley. The churn is an oblong box, its top formed of 2 inclined sides like the 2 roofs of a house, one of which opens upon a hinge for introducing the cream and taking out the butter. It is divided across the middle by a partition, perforated with holes, through which the cream can pass. A dasher works in each compartment. A valve at one end is designed for letting out the buttermilk. The whole may be placed in an outer box, containing either cold or warm water for producing the proper temperature.—The 2d class includes the common box churn, which has been in good estimation ever since its introduction, 30 years ago, as Gault's patent churn. It is either of rectangular or cylindrical form, the axis that carries the arms, which serve as dashers, passing through the ends of the cylinder, as this lies in a horizontal position. The upper portion forms the cover, which may be turned up, lifting with it the dashers out of the lower part. The large opening, which is the whole size of the churn, greatly facilitates the taking out the butter and cleaning the vessel.—The so-called barrel churn differs from the box churn by its axis and dashers being placed vertically in a cylindrical vessel standing upon one end and set in an outer cylinder, which contains water for heating or cooling. The revolving motion is given either with a drill bow or a winch handle.—A singular churn of the 4th division, called the diagonal churn, has recently been invented in England. A vessel of the form of a cask is made to revolve upon an axis passing through the heads, not at right angles with their surfaces, but diagonally from the outer edge of one head through to the opposite edge of the other head. The hole for introducing the cream and taking out the butter is on the side of the cask, and is closed by a tight valve. With each revolution the cream is thrown from one end to the other of the cask.—Churns for introducing atmospheric air into the cream by the action of the dashers have been contrived in a great variety of forms; the most simple probably is that with a hole passing entirely through the rod to which the dasher is attached, a valve opening within admitting the air as the dasher is raised, but opposing its exit by the same way as this is thrust down. The air is thus driven in bubbles through the cream, dividing it into multitudes of small particles and throwing it into a state of foam. This is done without lifting the dasher above the surface of the cream, and consequently without splashing. It is a remarkable fact in the history of this invention, that as many as 7 applications for a patent were presented almost simultaneously in the year 1849, from different parts of the United States, and all apparently from *bona fide* inventors. Under various modifications the same improvement has since been presented at the patent office by such numbers of inventors, that the most rigid scrutiny was adopted in their examination, and actual demonstration of their capacity was often required. In one instance a rival churn was set to work against one already patented, and with both butter was produced in the extraordinarily short space of 2½ minutes. Though this rapid completion of the process is the object usually aimed at in these improvements, it is not after all a desirable object, the best authorities agreeing that butter made so rapidly is not the best. Dr. Muspratt observes upon this subject: "When butter from cream forms in 45 minutes or an hour, the result is sure to be satisfactory; when it appears sooner it is soft, and if later is strong tasted. It has been stated in advertisements of table churns that butter may be obtained in them in 12 minutes. Parties known to the editor have made experiments with such table churns, in churning cream at different temperatures and speeds, but good butter was never obtained in less than 20 minutes, and even then it was soft and frothy."—Of the 6th class, the only churn that we shall notice is one lately patented in this country, which consists of an oblong rectangular box, the upper half of which may be taken off and replaced upon the lower half. Three parallel rollers are placed so as to revolve within and across the lower half, their bearings being let into its upper edge. One of these, placed toward one end of the box, is a plain pulley; the other two, placed at the other end, are fluted and work into each other. An endless sack is made to work around the plain pulley and between the two fluted ones like a belt, and in this sack is introduced the cream to be churned, openings with tight covers being contrived for the purpose. As one of the rollers is turned by a winch handle, the belt containing the cream is carried around and compressed as it passes between the fluted rollers, till the butter is formed. The box is made water-tight, so that the whole operation is under water.

CHURRUCA Y ELORZA, Cosme Damian de, a Spanish naval officer, born at
the province of Guipuzcoa, Sept. 27,
at Trafalgar, Oct. 21, 1805. He dist
himself at the siege of Gibraltar in
some of the survivors from the float
teries, after the latter had been destr
the English. Having received an appoin
in a Spanish surveying expedition to the
of Magellan, he wrote an admirable diary
exploration of Terra del Fuego, which wa
lished at Madrid in 1793. In 1791, bein
in command of a frigate, he was placed
head of an expedition fitted out for the
of surveying the coasts of the gulf of
The war which soon after broke out
Spain and France interrupted this wor
compelled Churruca to leave his task unfini
not, however, before he had complet
charts of the coasts of Cuba, Hayti, Porto
&c., some of which have since been publ
He was afterward sent as an envoy to
and was received with distinction by Nap
then first consul. In a letter to a friend,
ly before the battle of Trafalgar, he says
you hear that my ship is taken, know fo
tain that I am dead." In that battle,
having been shot away by a cannon
died 3 hours afterward.

CHURUBUSCO, a village of Mexico
brated for the battle, Aug. 20, 1847,
the American forces, under Gen.
Scott, advancing toward the city of
and the Mexicans, under President
Anna in person, defending the route to
capital. The battle of Contreras was
by a portion of the same forces on
day. Although 2 separate fields, the
classed together for the purpose of des
The American commander having by h
vance S. of Lake Chalco put it beyond
by which route he intended to make hi
the Mexican general immediately took m
to concentrate his defence around the
Accordingly, when the American advance
ed San Augustin, Aug. 11, they found
roads that led thence to the city o
San Augustin is 9 m. from Mexico.
way leads from it in a direct line. About
distant is San Antonio, and about 3 m. f
is Churubusco, beyond which the road
open to the hill castle of Chapultepec,
ward some of the gates of the capital.
San Augustin, however, leads to the left an
road, no better than a mule path, across
ged field of lava, called the *pedregal*, to Co
ras, 3 m., and 1 m. further it rejoins the
road on this side the village of Churubusco.
difficulties of this road to the left made it h
such as an army would attempt; neve
the Mexicans had taken pains to fortify
blocking it up and establishing an
camp on the portion of it called the
Padierna, where Gen. Valencia had a
force of about 7,000 men. His con
were, of course, open with the
Churubusco and with the capital.

of cannon in battery on a slope
obstructed range. During the
Anna moved out from the
with a large cavalry force,
troops posted at the village
from Contreras, but did not
ening demonstration by any
again toward the city.
were placed on the high-
to Churubusco, where
commanded. His first
at San Antonio, his next at Churu-
st was a strong position naturally.
of the village, and crossing the
angles, is the Rio del Churubusco,
onfined within earthen embank-
d with thick shrubs. The road
road, paved causeway, with steep
d above the marshy levels on
his causeway crosses the river
of stone. At the entrance to the
de pont) was a field work mount-
commanding the approach, and 2
Three hundred yards to the
de pont, and slightly in ad-
the road from Contreras, which
the causeway, was the massive
of San Pablo, with a flat para-
d tower, excellent for rifles, and
by an outer and inner wall, form-
tolerable fortress. On the left
he *tête de pont* a force of Mexican
the embankment of the stream,
causeway in rear, leading to the
posted the main body of infantry
alry. Numerous movable pieces
ground, in addition to 7 guns in
the total force of all arms may be
t 20,000. Such were the obstacles
ome. Gen. Scott, having arrived
at San Augustin on the 18th,
oissance, and determined to
on of Contreras, whence he could
rear of San Antonio, and then at-
sco in full force. With this view
his left wing, under his own im-
ction, toward Contreras, leaving
der Worth, in front of San Anto-
's division, supported by Twiggs's,
, under the guidance of chief en-
o cut a road for artillery to Con-
the course of this duty they drove
of the enemy's skirmishers, and
in range of his intrenchments estab-
ery of 3 field pieces, and replied
o his fire. Meantime Gen. Per-
h came up with the 2d brigade of
vision, and the Americans, compris-
(under the temporary command of
ick), Cadwallader's, Riley's, and
igades, slept that night on their arms
of Contreras. They numbered but
try, and without artillery. At 8
f the 20th, dark and raining heav-
took the road to the enemy.
pt across the ravine and

ascended the hill to the left toward the rear of the works. The moment he crested the mound the enemy opened a heavy fire of musketry and artillery, as did a body of troops on his right. He precipitated his columns, stormed the intrenchments, and carried the work, in 17 minutes by the watch. Meantime the engineer company and rifles, having delivered some effective volleys from the brow of the slope, inclined to the left and joined the attack on the Mexicans outside the left flank of the fort. Just then came up Ransome, who had been ordered to make a diversion in support of the main attack, and following him, Cadwallader to support Riley. Dimick was also pressing forward in support of Riley, when, coming upon a body of the enemy who threatened his flank, he faced about and charged them with success. The Mexican cavalry behaved badly, backing their horses over their own infantry, and at length, turning tail, fled. The battle might now be said to be won. Shields was fresh for pursuit, and did much execution among the fugitives, beside making many prisoners. The Mexican loss was 1,700 in killed and wounded, and 800 prisoners. Twenty-two pieces of artillery, with a large quantity of arms and stores, and 500 pack mules, fell into the hands of the victors. The first two pieces captured, which fell into the hands of the 4th artillery, proved to be the two pieces lost (though without loss of honor) by a company of that regiment at Buena Vista.—While the left wing of the American army was thus successful, the right was advancing by the direct road upon Churubusco. Worth commenced by making a demonstration against San Antonio, but the Mexicans, having heard of the fall of Contreras, made but a feeble resistance, and retreated upon their main body, the Americans pursuing until again in face of the enemy. Gen. Scott, meantime, with the victors of Contreras, was coming along the road from Coyocan, 1 m. distant from the causeway. The two divisions of the attacking army numbered together 8,000 men. On reaching the head of the road Scott despatched Twiggs's and Smith's brigades, with Taylor's field battery, to engage San Pablo. Twiggs soon had his hands full. Taylor's battery had been firing effectively, but the enemy's riflemen from the roof and windows kept pouring on him a destructive fire. Gen. Scott now resorted to the tactics by which he had more than once gained victories, by directing a strong force on the enemy's right and rear. Gen. Pierce, with his brigade, was detailed for this duty, being subsequently reënforced by Shields, his senior, who consequently took command. The rifles and Sibley's company of dragoons were afterward sent in aid of this movement. Worth meantime was hotly engaged in front with the *tête de pont*, and with the enemy's infantry on the river embankments. After severe fighting, simultaneously with a flank movement toward its rear, a gallant charge was made upon the front of the work, and the men clambering into the embrasures seized the guns and turned them upon San Pablo, where Twiggs was still hotly engaged. A good deal of fighting was required to dislodge the enemy from the shelter of the embankments and from the houses of the village. It was, however, accomplished. Shields all this time had been making a circuitous movement to gain an advantageous position from which to fall upon the enemy's rear. In this movement, struggling through swampy ground, his loss was very severe from the fire of the Mexican infantry, some 4,000 strong on the causeway, and supported by some 3,000 cavalry. Finally he charged upon and routed the infantry in front, just as the advance of Worth's column appeared in pursuit of the fugitives from the *tête de pont*. Twiggs's division meantime carried the defences of San Pablo, taking 1,200 prisoners and 7 pieces of cannon. The Mexican force were now all in precipitate flight toward the city, and pursuit was continued until the general prudently ordered it to cease. The American loss in all, at Contreras and Churubusco, was 1,053, of whom 139 were killed, including 16 officers. The enemy lost in killed and wounded 4,000—3,000 prisoners, including 8 generals—37 pieces of ordnance, small arms and ammunition in large quantities, and had whole corps cut off, dispersed, and dissolved. Among the prisoners were found 42 deserters from the American to the enemy's flag. They were subsequently tried according to the laws of the United States, sentenced by court-martial to be hanged, and the sentences in most cases executed. But this necessary severity was mitigated by the exercise of clemency on the part of Gen. Scott in such cases as appeared to offer any extenuating circumstances. There still remained between the invaders and the capital formidable defences at, and in advance of, its several gates and the castle of Chapultepec. Thus in one day were the battles of Contreras and Churubusco won.

CHUSAN, or CHOWSAN (boat-like), a group of islands, consisting of one large island with a great number of smaller ones, off the coast of China, about lat. 80° N., long. 121° E. They are beautifully wooded, abound in floral productions, and contain numerous first rate harbors. The capital of Chusan is Ting-hai. The population is considerable, and the land under the same carefully elaborated cultivation that is found in every part of the Chinese empire. Rice, wheat, sweet potatoes, chestnuts, walnuts, tobacco, tea, silk, and cotton are produced on the island. Chusan is an intermediate port between Japan and the Chinese ports of Ningpo, Hangchow, and Shanghai. In 1840 the British seized Chusan, and held the islands for a time. As stipulated in the peace in 1842, they were evacuated in 1846, and Hong Kong was ceded to the British in their stead.

CHUTTERPORE, or CHATTERPOOR, a town of Bundelcund, in the midst of a picturesque group of hills, 70 m. S. W. of Banda, and 10 m. N. E. of Saugor. It is the chief place of a native territory of the same name, which comprises 854 villages, an area of 1,240 sq. m., and a population of 120,000. The streets are narrow, and most of the houses small, but there are a few buildings, public as well as private, of considerable elegance. The most striking of these are the palace and mausoleum of Chutter Sal, who wrested the territory from Delhi, and in whose honor the town was named, and a house of entertainment for travellers erected by the rajah. The town once had a large transit trade, but is now much decayed. It manufactures quantities of coarse cutlery and paper.

CHYLE, the white, opaque, milky fluid found in the lymphatic vessels of the bowels during digestion. In certain circumstances it is yellowish or slightly reddish. Normally it is alkaline or neutral. For a long time this liquid was considered as containing most of the soluble parts of food; but, now that it is well known that the veins of the stomach and bowels absorb a good part of the food, the chyle is not regarded as so important a liquid as had been imagined. A microscopical examination of chyle shows that it contains various morphological elements, which are: 1, an immense number of extremely minute granules, which, according to H. Müller, are fatty particles, surrounded by an exceedingly thin albuminous capsule; they are not soluble in water, and they form by aggregating together the fatty globules of the chyle when it is treated by acetic acid or other reagents; 2, coarser granules grouped into masses, and, according to H. Müller, held together by a hyaline or perfectly transparent substance; 3, nuclei, holding minute nucleoli, and sometimes many granules; 4, lymph corpuscles, which perhaps differ a little from those of lymph, and from the colorless blood corpuscles, in having more varieties of size and shape; 5, blood disks. Chemically, chyle presents, like blood, 3 principal elements: 1, the granules and globules which are detected by the microscope; 2, a spontaneously coagulating principle, which is fibrine, very little differing from that of blood; 3, a serous fluid, containing, in a state of dissolution, albumen, various salts, sugar, &c. The modified albumen, called peptone by Lehmann, and albuminose by Mialhe, seems not to exist in chyle taken from the thoracic duct; showing that after having been absorbed in the bowels, it has been changed into ordinary albumen, and perhaps also into fibrine if the observations of Gulliver are right. The calculations of Bidder and Schmidt show that the quantity of chyle which passes every day into the blood in a man, amounting to 28 or 30 lbs., is from 6 to 7 lbs. (See ABSORPTION, BLOOD, DIGESTION, and LYMPH.)

CHYME, the pulpy substance into which the food is reduced by the mechanical division and chemical solution it undergoes in the mouth, stomach, and upper portion of the duodenum. Its consistence varies with the amount of fluid taken into the stomach; it is generally semi-

of a grayish color, having an acid re-
d varying greatly in composition ac-
the properties of the food, sometimes
g rich cream, at others a thin gruel.
is first submitted to the action of the
lkaline liquid, whose peculiar proper-
d on an albuminous substance, pty-
ach a state of change that it acts the
rment, having a chemical action upon
s elements, but only a physical action
ized substances; the food, thus re-
mastication and mixed with saliva, is
or the chemical operations performed
ch. The action of the gastric juice
u is chemical; the most characteristic
f this fluid is its acidity, depending on
and, according to some observers, hy-
acid. The amount of the gastric juice
the follicles of the stomach is in
he demand of the system for nu-
t to the quantity of food in-
most important fact, and shows
t digestion, and the preparation
any elaborated chyme, only so much
be taken as the body requires, or as
juice will dissolve; it is probable
inhabitants of the civilized world err
in this respect, laying the foundation
though perhaps slow disease. The
of gastric digestion are fortunately
n through the observations of Dr.
on Alexis St. Martin, who had a fis-
ning in the stomach, permitting a
ety of interesting experiments, until
impossible, except in animals. The
t enters the stomach, is thoroughly
the gastric fluid by a constant peri-
vement of its walls, and by the agita-
act of respiration; the movements
ore rapid as chymification advances,
the continual passage of chyme into
nes until the stomach is empty; these
ts, though not dependent on the ner-
m, are to a certain extent influenced
t is well known that powerful emo-
d the digestive process; the nervous
xert a general control and harmoniz-
nce over all the organic and animal
The process by which the food is
into chyme is strictly chemical, and
ade to take place outside of the body;
al chyme formed by the action of gas-
upon alimentary substances in a vial
ll the characters of natural chyme,
goes the same changes on the addition
e vital force, however, is necessary
cretion of the gastric fluid by which
sformations are effected. Though the
f dilute acids is necessary in the gas-
they have no power alone of digesting
active agent seems to be pepsin, an
mpound resembling albumen, soluble
ater, but insoluble in hot; this was
ned in an isolated state by Wasmann
stomach of a pig; Liebig considers
having no proper existence as such, but as a proteine compound acting like a ferment, and having the power of exciting a change in other substances in which it does not itself participate; it seems to dispose the alimentary substances, by the change which it excites in them, to become soluble in the acids of the stomach. It is now admitted that the action of the gastric juice is limited to azotized substances, and that starchy, saccharine, and oily matters are in no way affected by it. The experiments of Dr. Beaumont led him to some interesting conclusions on the time required for the conversion of different articles of diet into chyme; leaving out of view the disturbing influences of too great quantity eaten, violent exercise before meals, the state of the body and mind, he found, as a general rule, that the flesh of wild animals was more easily reduced than that of the allied domestic races; that beef was more quickly digested than mutton, and mutton than veal or pork; that fowls are rather indigestible, but that turkey is the most soluble of all flesh except venison; that a certain bulk is necessary for healthy digestion; that soups are not more easily chymified than solid food, and alone are not proper for the support of the system; that digestion is facilitated by gentle exercise after the lapse of an hour, but retarded by violent action; and that the influence of cold, as after swallowing iced fluids, is very prejudicial. After the chyme enters the duodenum it is mingled with the pancreatic and biliary secretions, which change both its sensible and its chemical properties. The mixture of bile with chyme, in Dr. Beaumont's experiments, separated the latter into 3 portions: a dark excrementitious sediment at the bottom; a whey-colored fluid in the centre, having proteine compounds, saccharine and saline matters in solution; and a layer of creamy matter on the top; the last two apparently constituting the chyle absorbed by the lacteals. The bile acts by its alkaline properties on the oily matters as a soap, rendering them soluble. The pancreatic fluid, alkaline, highly albuminous, and resembling saliva in its general appearance, is supposed by Bernard to be mainly instrumental in reducing the fatty matters to the state of an emulsion capable of being taken up by the lacteals. Beside the fluids already mentioned, the chyme is mixed with the secretion of the intestinal follicles, also alkaline, exerting a powerful solvent action on albuminous matters, and having the power of converting starch into sugar like the saliva and pancreatic fluid. The united action of these 5 fluids renders them a universal solvent, capable of reducing all kinds of food to a condition fit to be presented to the absorbents and lacteals—in other words, of converting the food into chyme, and the latter into chyle. At the lower end of the small intestines, the residue of the mixture of the chyme with the various secretions becomes thicker and darker colored, and contains little more than insoluble, indigestible, and excrementitious matters.

CIAMPI, Sebastiano, an Italian scholar, born at Pistoja, Oct. 30, 1769, died in Florence, Dec. 14, 1847. Ordained as a priest in 1793, he was appointed professor at the university of Pisa in 1803; owing to some misunderstanding with his colleagues, he accepted in 1818 a professorship at Warsaw, and returned to Italy in 1822, a prebend having been conferred on him in Poland, which enabled him to devote himself to literary studies at Florence. His principal works treat of Italian literature and art, of ancient literature, of the Latin literature of the middle ages, and of the history of Poland.

CIBBER. I. Caius Gabriel, a sculptor, born in Holstein, came to England during the protectorate of Cromwell, and was employed to execute the bassi-rilievi on the pedestal of the London monument. He is now principally known as the sculptor of the 2 figures representing raving and melancholy madness, which adorned the principal gate of old Bethlehem hospital, and are now preserved in the new hospital in St. George's Fields. He was in later life employed by the duke of Devonshire in the improvement and decoration of his family seat at Chatsworth. II. Colley, an English poet and dramatist, son of the preceding, born in Nov. 1671, died Dec. 12, 1757. He commenced his public career as an actor in 1689. His success was for many years very indifferent, but he at last attained popularity in the personation of feeble old men and fops. His portrait is extant in the character of Lord Foppington. As a dramatic author, he wrote and adapted about 30 plays of various descriptions, among which are "Love's Last Shift," "Love Makes a Man," "She Would and He Would Not," the "Careless Husband," the "Nonjuror," his best play (an adaptation of Molière's *Tartufe*, on which Bickerstaff afterward founded his "Hypocrite"), the "Provoked Husband," and the modern acting version of Richard III. He also wrote an autobiography, under the pleasant title of an "Apology for his Life." He was poet laureate for a time, and figures as hero of the "Dunciad" in that capacity. III. Theophilus, an English actor and author, son of the preceding, born Nov. 26, 1703, died in Oct. 1758. He passed immediately from Winchester school to the stage, and was enabled by his father to come forward with considerable advantages, while his merit procured for him the favor of the public. But his passion for pleasure prevented serious attention to study, and he passed his life in occasional effort and frequent dissipation, generally in penury. He married early an actress of the name of Johnson, and after her death he formed, in 1734, a 2d union with Miss Arne. His extravagance obliged him to retire to France in 1738, and on his return he separated from his 2d wife under very painful and disgraceful circumstances. In 1758 he made an engagement with Mr. Sheridan of the Dublin theatre, but perished by shipwreck while crossing the Irish channel. He was concerned with a work entitled "Lives of the Poets of Great Britain and Ireland to the time of Dean Swift" (London, 1753, 5 vols.), the authorship of which is claimed for a Scotchman named Shiel, who purchased from Cibber the privilege of using his name upon the title page. IV. Susannah Maria, an English actress, wife of the preceding, born in 1716, died Jan. 30, 1766. She was educated in music by her brother, Dr. Arne the composer, made her first public appearance as a singer, and after her marriage performed in tragedy. She was admired for her talents, sensibility, and graceful manners, and is reputed still among the great actresses of the English stage. Juliet, Hermione, and Celia were among the characters which she most admirably portrayed. Handel was so enthusiastic in his admiration of her that he composed parts expressly to suit her voice, and himself instructed her in singing them. He used with Quin to spend his Sunday evenings at her house; and Garrick is said to have exclaimed when he heard of her death: "Then tragedy has expired with her." She was buried in Westminster abbey.

CIBOT, Pierre Martial, a French Jesuit missionary in China, born at Limoges in 1727, died in Peking, Aug. 8, 1780. Having distinguished himself by his excellent scholarship, he departed to China in 1758. First admitted into the household of the emperor as a gardener, his learning and talent soon gained for him the position of court mathematician. He conceived the project of explaining the Old Testament by supposing a connection between the Jews and Chinese, and wrote a long commentary on the book of Esther. Extracts from this, and a large number of his dissertations, are contained, with those of Amiot, in the *Mémoires concernant les Chinois*, Paris, 15 vols. 4to.

CIBRARIO, Luigi, an Italian historian, born in Turin, Feb. 23, 1802, was employed by King Charles Albert on diplomatic missions to foreign countries, took possession of Venice (Aug. 7, 1848) as commissioner for Sardinia, became in the same year a member of the senate, and in April, 1849, was sent by that body to Oporto to induce the king (but in vain) to return to Sardinia. A description of this mission and of Charles Albert's character is contained in Cibrario's *Ricordi d' una missione in Portogallo al re Carlo Alberto* (Turin, 1850). Among Cibrario's literary works are *Libro di novelle* (Turin, 1834), and *Novelle* (2 vols., Milan, 1836), and editions of Petrarch's *Rime* and of other distinguished writers; but his fame rests mainly upon his *Storia della monarchia di Savoia*, and his other numerous contributions to Sardinian history.

CICERO, Marcus Tullius, the great Roman orator, statesman, and philosopher, born at Arpinum, Jan. 3, 106 B. C., assassinated Dec. 7, 43 B. C. Cicero belonged to an equestrian family; he and his brother Quintus were educated at Rome by eminent teachers, among whom was the poet Archias. At the age of 17 he attached himself to Quintus Mucius Scævola, the augur and pontifex, to study law and politics; he studied the Epicurean philosophy

rus. The social war interrupted
and he was obliged to serve in
the war he returned to his
with wed ardor, and for a long
nothi to do with public affairs, not
the nces of Marius. He was
Philo io, and by him was
er orator could have been
re study rhetoric; he became
the Stoic philosophy under Dio-
o lived in his house; in rhetoric his
was Molo of Rhodes. Thus prepared,
his first appearance as an orator in a
but his infirm health stopped him at
ning of his career, and for its restora-
travelled in Greece and Asia in 79–'8.
ns he became acquainted with Atticus,
knight, whose friendship he enjoyed
death; at Rhodes he met Molo, and
to school, where he overcame his vio-
r of speaking, which his feeble frame
to bear. He returned to Rome
body and mind, and from this
be dated his public career. In 75
uæstor under Sextus Peducæus, prætor
where he ruled with the greatest
beloved by all the people. In 70 he
le; in this year he brought his
ist Verres for extortion in Si-
66 was prætor, and in 63 consul,
the summit of his ambition. His
has been rendered immortal by the
of Catiline's conspiracy, for which
d *pater patriæ.* But here he laid
for his own destruction. Ha-
his own boasting had made
enemies, especially Clodius, whom
lly offended, and unable to en-
oks of party strife, he left Rome
the enraged people burned and de-
his house and villas; at this period
wed himself of a weak and tim-
ition. In 57 he returned with
Lentulus and Spinther being consuls,
opposer of Clodius, tribune. The
senate became again the theatres
ions for many years. In 52 he de-
o, and was chosen into the college
a very great honor. In 51 he was
of Cilicia, in Asia Minor, which he
with the strictest justice; in this
he proved his military talents in re-
conquering the enemy, but was dis-
on his return to Rome in not obtaining
h. At this time the disputes be-
Cæsar and Pompey were at their height,
ro joined the latter. After the defeat of
at Pharsalus (48), he came to Rome at the
n of Cæsar. He then devoted himself to
y until the death of Cæsar in 44; after
in mingled in the political strife of the
attempted the ruin of Antony in his
ppics, but he lost his head for his pains.
Antony, and Octavianus, the new tri-
de out a list of proscribed persons,
whom was Cicero. Octavianus permitted
him to be slain by Antony to gratify his revenge, though he might have prevented it by his personal authority. He was slain in 43 B. C., at the age of 64; and it happened that the man who severed his head from his body, the leader of the assassins, was one whom Cicero had successfully defended. Cicero was married for the first time in 77, just before his travels, to Terentia, by whom he had a son, Marcus, and a daughter, Tullia; he was divorced from her in 46, and married Publilia, a rich lady, from whom he was divorced on account of her rejoicing at the death of her stepmother. His son Marcus was honored by Augustus, but was, according to all accounts, a worthless and intemperate man, in every way unworthy of the noble philosophy addressed to him by his father in his *De Officiis.* Cicero's brother Quintus died about the same time from the persecution of Antony. In 1544 a monument was discovered in the island of Zante (the ancient Zacynthus), supposed to have been the tomb of Cicero, but it is generally believed that he was buried in his academic villa in Italy.—In person Cicero was tall and slender, feeble, but strengthened by temperate habits; in his disposition he was amiable and cheerful, firmly attached to his family and friends, generous in the extreme, and never actuated to the performance of a base action, either in public or in private, by malice or envy. He was very rich, but his riches were of his own procuring; he was not extravagant, and never avaricious. He possessed no less than 14 villas in different parts of Italy, whither he retired to devote himself to study and meditation; the most celebrated was the one called Puteolanum, also named after the academy at Athens; after his death it fell into the hands of strangers, and among others of the emperor Hadrian, who changed it into a palace, in which he died; the town is now called Pozzuoli. The many virtues of Cicero should make us indulgent toward his vices, or rather his foibles; he has been accused of want of prudence, decision, and fortitude, but the chief charge against him has been vanity. The love of approbation was the mainspring of his noble deeds; without it he never could have summoned up courage to enter upon his daring tasks, especially on the suppression of Catiline's conspiracy; he carried this passion so far that it sometimes seemed duplicity; but take his virtues and his foibles, and place them in the balance, and the former will far outweigh the latter. As a statesman, he dearly loved his country, and not a single mean or unworthy deed can be found in his whole political career; he was a true patriot, a perfect *bonus vir.* As a scholar his learning is to be praised, not so much for originality as for extent; his reading embraced every department of knowledge; he attempted almost every branch of literature, and with no mean success; but eloquence was the proper field for the display of his talents. He possessed some poetic talent, but did not, as far as is known, much cultivate it. Of his

talents as a historian no judgment can be formed, as none of these works are extant. In philosophy he shows himself a sound thinker, and a well-read and acute reasoner; one of his great merits in this department is the beautiful extension of the imperfect ideas of others in a language peculiarly his own. In law he displays some knowledge, although he was not a professed lawyer; some of its branches he was quite familiar with, and to the moderns he is the most important authority in regard to Roman law, many points of which are discussed in his orations.—The works of Cicero may be divided into 4 classes: rhetorical, oratorical, epistolary, and philosophical; many of the last 3 classes, and all of his poetical attempts, are lost. It may appear strange that few of the writers of the Augustan age mention the works of Cicero; but this is easily accounted for when we consider the peculiar circumstances of their situation in regard to Augustus, who was somewhat jealous of his newly-acquired power. Livy and Asinius Pollio give unqualified praise to Cicero; in the silver age he was much praised by all; even the Latin fathers extol him, and abound in quotations from his works. His literary merits are of the highest class; his Latin is of the purest; his style harmonious and pleasing, neither too ornamental nor too plain. In the middle ages Cicero was absolutely idolized; there was a class of writers whose aim it was to acquire the language of Cicero, and who would hear or speak of nothing but him; they carried their whim so far as to style themselves "Ciceronians," among whom were many of the learned men of the times. Erasmus at last opposed this "Ciceromania," not because he did not like Cicero, but in order to keep the admiration of him within proper limits. The *editio princeps* of his works was published at Milan, 1498; the best edition perhaps is that of Gronovius, at Leyden, 1692; others are those of Ernesti, 1777; of Olivet, Paris, 1749; and of Orelli, Zürich, 1826–'46. Cicero's rhetorical works are the result of his Greek instruction, diligent study, and long experience. He defines eloquence as "the art of gaining others to our opinion;" a definition which, as Quintilian says, is rather too limited. It is a little remarkable that the first work in the class of rhetoric, usually contained in the writings of Cicero, does not belong to him; it is entitled *Rhetoricorum ad C. Herennium libri quatuor.* The opinion that this belonged to Cicero arose from quotations in the Latin fathers as his; Quintilian quotes similar passages as coming from Cornificius. Leaving Cicero out of the question, opinions vary as to the writer; some ascribe it to Tullius, others to Tiro, and some to Cicero's son Marcus. The 2d work is *Rhetorica*, in 2 books, written in his youth, about the year 88; it is considered of no importance even by Cicero himself; it seems to be notes of lectures, and this and the preceding may be merely minutes taken by 2 individuals of the same course of lectures. The 3d is *De Oratore libri tres ad Quin*
about the year 55; it
distinguished orators o
own, when Crassus and Ant
his object was to set up his ideal
and to prescribe the course of educ
not so lively as Plato, but yet is
He attached some value to it,
interesting as it shows his own
cation; it is written with great
grace, and abounds in beautiful
that on wit, in the 2d book. It
most perfect of his works. The 4t
sive de Claris Oratoribus, written in
return from Pharsalus; this is also
of a dialogue, and is very importa
tory of Roman eloquence; it has
preface on the eloquence of Greec
is *Orator, sive de Optimo Dicendi*
dressed to Brutus, in which he de
perfect orator. The 6th is *Topica*,
Trebatius, published in July, 44, ju
death of Cæsar; it was written on
Rhegium, in compliance with the
Trebatius that he would make him
legal arguments; it is an abstract
pics" of Aristotle, which Treba
to comprehend. This is the
whom Horace consults as to whe
write satires or not. The 7th is *L*
Oratoriâ, a dialogue between Cic
son; it was written about 46,
of rhetoric, treating of the doctri
ment according to rhetorical
uineness of this has been quest
on account of its numerous defe
is *De Optimo Genere Orator*
a preface to translations of two
mosthenes and Æschines; he
with belonging to the Asiatic sch
here vindicates himself, and sho
kind of eloquence.—The 2d class
works consists of his orations;
have not come down to us, either
were not delivered after they were
because they were not written d
long time after they were deli
fragments of single orations leave
the excellency of those which hav
In his orations Cicero discusses mat
and of private life, and affords invalu
of information regarding the public
tic usages of Rome. His first o
was *Pro P. Quintio*, in which
rival Hortensius, delivered in Sep
The 2d, *Pro Sexto Roscio Amerin*
his first criminal case, in which he
charge of murder brought agai
the year 80; Cicero displayed co
age in the management of this
was opposed to the dictator Sylla,
deal with many delicate political
gained his case, and with it great
3d, *Pro Q. Roscio, Comœdo*, delivere
this he defends the great actor,
sued for debt; the beginning of t

4th, *In Q. Cæcilium*, a kind of preface
ccusation of Verres, in the year 70;
claimed the right to accuse Verres.
n Verrem, divided into 2 parts: the 1st
e introduction, in which he brings for-
proofs of Verres's guilt, in one oration;
io consists of several orations, in which
an account of Verres's crimes; these
delivered, as the accused withdrew his
r the 1st *actio*, and went into volun-
; Cicero, however, published them.
Pro M. Fonteio, in the year 69, in
defends the accused in a charge of
by exciting pity for his client, and
st his accusers; the first part is
nd of the rest there is only one
Rome. The 7th, *Pro Lege Maniliâ*,
livered before the people in favor of
f Manilius, that the command of the
war should be given to Pompey; this
nd beautiful oration. The 8th, *Pro*
io Avito, in 66, by which he obtained
l of the defendant, who had been ac-
poisoning his father-in-law. The 9th,
grariâ in Servilium Rullum Orationes
; the intention of Cicero was to defeat
of Rullus, who wished to sell the pub-
for the benefit of the plebeians; this
ery important, as it treats of the ad-
of the Roman public lands, but
reason it is difficult to understand.
ro C. Rabirio, delivered before the
this was a case of murder, and the
chosen had been appointed in an
nner; after his sentence the defend-
the custom, appealed; this oration
rogatives; Niebuhr has made some
concerning it in the Vatican. The
ing of 4 orations, *In Catilinam*, in
or their eloquence, and historically
tance, as showing the state of the
orations have had innumerable
rs, and are familiar to every Latin
The 12th, *Pro L. Murenâ*, in 63; he
accused of using improper means to
onsulship in opposition to Servius Sul-
fus; this also gives a vivid picture of
. In this oration Cicero is very severe
e profession of law, to which Rufus
; his remarks must be received with
ble allowance, as it was the custom
ow, for an orator to attempt to preju-
udience against his opponent by di-
upon such topics as his profession,
ons to various matters foreign to the
l; by substituting a vacillating jury
populace, this case might very well
argued before a supreme court of the
ury. The 13th, *Pro L. Valerio Flacco*,
had just returned from Asia, which
verned as pro-prætor; he was defend-
the greater readiness, as Flaccus was
hen Cicero was consul in 63. The
C. Cornelio Sullâ, who had been ac-
taking a part in Catiline's conspiracy.
, *Pro Aulo Licinio Archiâ*, the teacher of Cicero; his title to the rights of citizenship had been called in question, and Cicero maintains it with consummate skill, fine language, and excellent method; although the genuineness of this oration has been doubted by some, who find in it marks of carelessness and levity. The 16th consists of 4 orations, *Ad Quirites*, *In Senatu*, *Pro Domo suâ ad Pontifices*, *De Haruspicum Responsis*, in 57; these relate to his domestic affairs; their authenticity was called in question by Markland, an English scholar, in 1745, who styles them mere rhetorical exercises; this opinion has been opposed with great eagerness by Ross, Gesner, and Wolf. The 17th, *Pro Cneio Plancio*, in 54; he had been accused of using improper means to obtain the prætorship, and was defended by Cicero, whom he had hospitably received when in exile; this oration was much altered after its delivery. The 18th, *Pro Publio Sextio*, in 56; he had also treated Cicero kindly when in exile, and was a bitter enemy of Clodius. The 19th, *In Vatinium;* this is connected with the last, and is an examination of Vatinius, a witness against Sextius. The 20th, *Pro M. Cœlio Rufo*, in 56; he was accused of murder. The 21st, *De Provinciis Consularibus*, in 56. The 22d, *Pro L. Cornelio Balbo*, in 56; his title to the rights of citizenship, presented to him by Pompey, was called in question. The 23d, *In L. Calpurnium Pisonem*, in 55, delivered before the senate; this is a reply to Piso, who, when governor of Macedonia, had been recalled through the influence of Cicero; it is the most severe and bitter of all his orations, displaying the whole political career and secret actions of Piso; the beginning is lost. The 24th, *Pro Tito Annio Milone*, who was accused of the murder of Clodius, delivered in 52, but written down much later; though unsuccessful, this is considered by many one of his best speeches; Cicero, moreover, took a personal interest in the case for political reasons; there is a part of a commentary upon it by Asconius. The 25th, *Pro C. Rabirio Posthumo*, in 54; he was accused of being connected with Gabinius in the mismanagement in Syria; Cicero has been much blamed for pleading this case. The 26th, *Pro M. Marcello*, in 47, before the senate; this was to obtain the recall of Marcellus from exile, and was the first delivered after Cæsar became the head of the state; it was written down long after it was delivered, yet it is one of his best for its style, language, and method; it had always passed for one of Cicero's best orations until the time of Wolf, who denied that he wrote it at all, and published a pamphlet to prove that it is only a rhetorical performance at the schools; this pamphlet is perhaps one of the best specimens of modern Latin extant; this statement met with many opponents, especially Jacob, who would not give up the opinion of centuries so easily. The 27th, *Pro Q. Ligario*, in 47; he was a partisan of Pompey, and was successfully defended by Cicero against Tubero. The 28th, *Pro Deiotaro*, the tetrarch of Galatia,

and the friend of Pompey, who was accused of conspiring to murder Cæsar, in 46; he was defended with success. The 29th, *Orationes quatuordecim in M. Antonium*, sometimes called the "Philippics," in imitation of those of Demosthenes against Philip of Macedon; written between September, 44, and May, 43 B. C., and designed to defeat the ambitious schemes of Antony; the 2d, which is the best, was not delivered; it is a reply to an attack by Antony in the senate. These orations may be considered as the cause of Cicero's murder, as they kindled a flame of vengeance in the breast of Antony which nothing but his blood could extinguish; the language is forcible, pure, and elegant; beside exposing the public and private life of Antony, they afford important materials for the history of that troubled period. These are all the orations of Cicero which we have nearly or quite complete; there are some imperfect ones, of which may be mentioned the *Commentarii*, said to be in 13 books; they were probably notes, which he used when he afterward wrote out his speeches; the loss of these is much to be regretted; *Pro C. Cornelio; Pro Togâ Candidâ adversus Competitores; Pro M. Æmilio Scauro; De L. Othone*, to allay the tumult which had arisen on account of the division of the seats at the theatre. In connection with the orations of Cicero, should be mentioned those by whom new fragments have been discovered; the most celebrated is Angelo Mai, for many years the librarian of the Vatican; others are Peyron, Niebuhr; Poggio did not discover orations, but some of the commentaries of Asconius upon them.—As an orator, Cicero is without doubt the greatest his country has ever produced; even in his own time, he was placed by the side of Demosthenes. It is no easy matter to compare these two great orators, on account of the wholly different national characters and political conditions of their respective countries. Demosthenes excels in power of language and depth of thought; Cicero, in grace, clearness, imagination, wit, irony, and appeals to the feelings. Cicero, in fine, exhibits the happy medium between the dryness of Demosthenes and the exuberance of the Asiatic school; no ancient orator could so easily and naturally turn the feelings of an audience in any desired direction; in his manner of treating his subjects, in his expositions of the great principles of law, in his successful guidance of the ship of state through the perils of civil commotion and threatening war, in his wonderful power over the feelings and sympathies of an audience, and in the elegance, chasteness, and brilliancy of his expressions, we recognize in the great Roman orator the rarest qualities of mind and heart. With Cicero Roman eloquence attained its highest excellence, and after him rapidly declined; the condition of the country did not permit its exercise for any but political purposes; it fell into the hands of rhetoricians, who cultivated it only as tending to strengthen the mental powers; it became a written eloquence, composed in the schools; this kept up the interest in it for a short time, but even this shadow of former glory was soon rendered invisible by the setting of the sun of freedom. Cicero has had hosts of commentators, the oldest and best of whom is Q. Asconius Pedianus, a native of Padua; he wrote commentaries on these orations, A.D. 41, for the use of his sons; the fragments preserved show the great value of this work; they relate to 9 orations, and were discovered by Poggio in St. Gall; some others were found in the Ambrosian library at Milan. —Cicero was also chief among the Roman philosophers; he was first an Epicurean, and the disciple of Phædrus; he afterward paid great attention to the Academic philosophy, on account of its excellent system of philosophical and rhetorical education; finally he devoted himself to the Stoic school, yet even this, like the rest of his countrymen, he regarded only as a means of education, and not as a rule of life. He discontinued his philosophical pursuits when he entered upon public duties; but after the downfall of the republic he again devoted himself to these studies, and wrote in rapid succession the works which do him so much honor. His object was the praiseworthy one of making his countrymen familiar with the philosophy of Greece, for the Romans, absorbed in agricultural, military, and political pursuits, had neither the time nor the inclination to develop any system of philosophy; the reader must not, therefore, expect to find in his works any thing new. Cicero was for a long time considered authority on matters of philosophy, instead of the Greek originals; but after the revival of learning in the middle ages, more attention was directed to the latter. Great praise is due to him for creating his language, as any one will admit who examines the stiff and unnatural expressions of the writers on this subject who preceded him. Cicero belongs to no exclusive system of philosophy. He does not appear to have formed decided opinions on many debatable subjects, and it is generally difficult to determine what his opinions really were; in reading his philosophy it is necessary to observe in what character he speaks, whether that of an Academic or a Stoic, before his true meaning can be ascertained. On abstruse subjects, such as God, the soul, &c., he never expresses himself with certainty, but always speaks in the most guarded manner; he has, therefore, often been censured for opinions that he probably never entertained, as, for instance, atheism. He seems to have written on the Academic principle, "that there is no certain knowledge." In his manner of treating his subjects he follows Plato, but in his morals he is decidedly a disciple of Zeno the Stoic. His philosophical works, in the order in which they were written, are the following: *De Republicâ libri sex ad Atticum*, composed at his villa near Cumæ, 54 B. C.; this is a dialogue between Scipio, Lælius, and others on "What is the best form of a state?" The scene is laid about 129 B. C.; a very interesting time, when the country was convulsed by the disturbances of the

[illegible] s furnish many illus-
[illegible] the work; the book
[illegible] Scipionis. This work
[illegible] in some respects, though
[illegible] the two is entirely differ-
[illegible] al, Cicero practical. It
[illegible] uries, with the exception
[illegible] cipio," which was saved by
[illegible] ntary upon it by Macrobius;
[illegible] fragments, too, found in the
[illegible] rs. [illegible] i, the librarian of the
[illegible] a palimpsest, the upper
[illegible] was a book of the Psalms, and
De Republicâ; similar strange fel-
not uncommon in the palimpsests;
the [illegible] and 2d books have been
[illegible] work is *De Legibus libri*
[illegible] of this has been questioned
[illegible] t in another book, *De Divina-*
[illegible] enumerates all his works, and that
[illegible] ng them; but this reason is in-
the present book is unfinished,
would not have been included in
writings; the 2d and 3d books
[illegible] never revised; it was written
the death of Clodius, when Cicero
into the college of augurs, in 53;
published until after his death; in
Cicero shows that there is in man a
[illegible] ible to make and respect laws;
[illegible] tes a 5th book. The next is
[illegible] on account of the chang-
[illegible]; it was originally written
[illegible] afterward rewrote it. It treats
[illegible] emy of Socrates and the new of
and Philo; it also contains a sketch
of Arcesilaus, or the middle acad-
[illegible] e much of the 1st book of the
[illegible] was written in 45, and is per-
[illegible] a book as any by which to ascer-
's real opinions, always a difficult
[illegible] *Bonorum et Malorum libri*
[illegible] ed to Brutus, was written also
[illegible] of dialogues containing the
[illegible] most celebrated Greeks on this
the 1st book Torquatus gives the
[illegible] ns, and in the 2d Cicero refutes
[illegible] and 4th Cato and himself state the
of the Stoics; and in the 5th Piso gives
of the old academy. It is very im-
[illegible] ary history. *Tusculanarum Dis-*
[illegible] *quinque ad Brutum* appeared in
[illegible] en with great rapidity, and bears
carelessness purposely introduced to
[illegible] air of ease; it consists of dialogues
[illegible] villa upon various practical subjects;
[illegible] is on the contempt of death; the
[illegible] and constancy in suffering; the
[illegible] means of alleviating suffering; the
[illegible] passions; the 5th on virtue as the
happiness; the last is by far the best;
[illegible] ition is the old English one by Davis.
[illegible] *Deorum libri tres ad Brutum* was
[illegible] April, 44; in this dialogue are ex-
[illegible] opinions of the Epicureans, Stoics,
[illegible] on this subject, but as usual it is difficult to get at his own opinion; he seems to agree with Plato and the Academics; his object was to introduce better views on this important subject. *De Divinatione libri duo* was written immediately after the last, and is connected with it; in the 1st book his brother Quintus states the opinions of the Stoics in favor of it, and in the 2d Cicero refutes them. *De Fato* is intimately connected with the preceding two; its intention is to overthrow the Stoic doctrine of fate, and to establish that of free will; it is very imperfect, the first and last portions being lost, and the text of the rest quite unsettled. *De Senectute*, addressed to Atticus, was written in the country; it describes the peculiarities of old age, and shows that they should be looked upon without uncharitableness, as it is the lot of all who outlive friends and kindred; it is mostly a soliloquy, and so charming that we are almost persuaded to long for old age as the most enviable portion of human life. *De Amicitiâ*, addressed also to Atticus, was composed soon after; Lælius is the chief character, and gives utterance to the most exalted sentiments. *De Officiis libri tres*, written in 44 to his son Marcus, abounds in noble sentiments, although not quite coming up to the theoretical morality of modern times. *Paradoxa Stoica*, in 6 books, addressed to Brutus, treats of the dogmas of the Stoics. Cicero wrote several other philosophical works, wholly or nearly lost; he alludes to several himself, as: a Latin paraphrase of the *Timæus* of Plato; *De Gloriâ libri duo*, addressed to Atticus, of which we have a few fragments; there is a report that Petrarch had a MS. of this work; *Œconomicorum libri duo*, in imitation of Xenophon, laying down the duties of the master of a family; Columella made some use of this; it was written when he was very young, about 84 B.C.; a translation of the works of Protagoras, a follower of Democritus; *Laus Catonis*, in praise of Cato Uticensis, in 46; this was received with such approbation that Cæsar, fearing its influence, wrote *Anti Cato*, in answer to it; only a few fragments are preserved; *De Philosophiâ*, in which he recommends the study of philosophy, and defends it against several objections; *Consolatio*, written on the death of his daughter Tullia; *Liber de suis Consiliis*, written in the year of his consulship, 63 B.C.; *Chorographia*, a geographical work. After the death of Cicero, the zeal for philosophy continued undiminished, although it was pursued only as a means of intellectual culture. Cicero was also a didactic poet; he translated the *Phænomena* of Aratus, a part of which has come down to us.—There have been many lives of Cicero; there was one written by his freed man Tiro, and one by Nepos, which are lost; we have one by Aurelius Victor, and another by Plutarch, beside many facts and data collected from his own writings, especially his letters; the best modern life of Cicero is by Middleton. The best English translation of the works of Cicero (with the exception of the "Letters") is

published in Bohn's "Classical Library." The "Letters" are translated by Melmoth and Heberden.

CICERONE, a person who shows and explains to visitors the sights of a city. The loquacity of such persons led the Italians to apply to them the ironical term of *ciceroni*, after Cicero. Rome is perhaps the only city where many persons of fine education are occasionally found among *ciceroni*. Indeed, a number of enthusiastic German archæologists, as Fernow, Heit, and Reichenstein, volunteered for some time in this capacity for the purpose of imparting instruction to others, and at the same time improving their own knowledge.

CICOGNARA, LEOPOLDO, count, an Italian writer upon the fine arts, born at Ferrara, Nov. 26, 1767, died in Venice, March 5, 1834. His first literary effort was a poem published at Palermo, entitled *Le ore del giorno*. He officiated for some time as ambassador to Turin, and subsequently as councillor of state. He protested ineffectually in 1805 against the change of the Italian republic into a kingdom, and withdrawing from public service, was elected president of the academy of fine arts at Venice. Here he published his history of modern sculpture, a work displaying good taste and great erudition, and continuing the history of art from the point where it had been left by the labors of Winckelmann and D'Agincourt. This work was dedicated to Napoleon, who contributed to defray the expense of its publication, and it is the chief foundation of the reputation of Cicognara. He also published a valuable catalogue of books upon the subject of art, and 2 splendid volumes upon architecture. He was the friend and biographer of Canova.

CID, a Moorish title, signifying "my lord," applied by the ambassadors of the Spanish Saracens of Granada to the most distinguished champion of Christianity and of the old Spanish royalty. His true name was Ruy Diaz, count of Bivar, and he is also known in Spanish literature as *el Campeador*, or the champion. He was born in N. W. Spain about 1040, and died in 1099 at Valencia, which city he had rescued from the Moors. Southey's "Chronicle of the Cid" (London, 1808), which enjoys a high reputation for correctness, is not a translation of any one Spanish work, but is made up from 3 different authorities, parts of which were selected by the author as being, in his opinion, the more truthful and trustworthy. The chronicle, from which the greater part of Southey's work is compiled, was printed at Burgos in 1593. The real author as well as the exact date is unknown. Aben Alfarax, the Moor, is named in the end of the book as its author; but most Spaniards attribute it to Gil Diaz, the uncle of the subject of the memoir. Mr. Southey, whose opinion is entitled to much respect, considers it certain that it is the work of neither, but probably that of some Spaniard who had access to Arabic documents; for, as he well observes, "there is nothing Arabian in the style of the 'Chronicle,' except the lament for Valencia, which is manifestly so." He might have added to this, that the spirit of the work throughout is Christian, constantly recording the exploits of the Spanish leaders, and exulting over their prowess, but never exhibiting either sympathy with the Moors, or indignation at the cruelties practised on them by the victors. It is hardly probable that this would have been the case had the author been a Moor, even if subsequently converted to Christianity. A yet stronger reason for assuming that neither of the persons named is the author of the work, is this, that they were both contemporaries of the Cid; whereas, evidently, the book was written subsequent to his decease, since persons are named in it who did not flourish until after the death of the hero. It may, however, be assumed as certain, that it was composed within a century and a half, at furthest, of the time at which he lived, while the memory of his deeds was yet fresh in the minds of men, and while original documents still abounded in the land of which he was the pride. The second authority is the "Poem of the Cid," which is supposed by Sanchez to have been written in the middle of the 12th century, some 50 years after the death of the knight; but which Mr. Southey believes, from internal evidence, to be the work of a contemporary. "Be that as it may," he adds, "it is unquestionably the oldest poem in the Spanish language, and beyond all comparison the finest." The third and last authority, of which comparatively little use has been made, is the "Romances of the Cid," of various dates, and by different unknown authors, which have been done into English verse with great fidelity and spirit by Mr. Lockhart. These must not be regarded as more historical or trustworthy than such English ballads as "Chevy Chase;" but as authority for costume and manners, they are often of great value and importance. Such, however, is not the case with the "Poem of the Cid," which is to be regarded, not as metrical romance, but as metrical history. It was written before those fictions were invented concerning the hero, which, like the similarly exaggerated accounts of feats ascribed to Camillus, Brutus, and others of the early Roman worthies, have induced many authors to discredit, not only what is clearly fiction, but that which there is not the slightest reason to disbelieve. Mr. Southey has often, he says, "preferred it to the 'Chronicle,' in point of fact, and always in point of costume; for, as the historian of manners, this poet, whose name has unfortunately perished, is the Homer of Spain."—The first event of the poetic life of the Cid is his avenging the insult done to his aged father, Don Diego Laynez, by the count Don Gomez de Lozano, lord of Gormaz; when, on hearing that the former had been vanquished in fight, after which shameful reproach and affronts had been added, he declared that "of Heaven he asked nothing but justice, of man only a fair field," and, receiving the old man's blessing and the sword of

went out, defied the proud count, slew
, cutting off his head, brought it home
to his horse's collar, dripping blood.
, it is said, the old man sitting at meat,
table spread, and the food lying before
ısted, when he bade him look up, and,
him the head, told him there was the
ch should restore him his appetite, for
which had insulted him was a tongue
and the hand which had wronged
hand no longer. Soon after this, it
her died; and shortly afterward,
entering Castile in force, Ruy
d the country and fell upon them,
with great slaughter, and taking
prisoners. In consequence of
and honor won by the Cid in this bat-
doña Ximena, daughter of the count
, whom Ruy Diaz himself had slain,
king to bestow her upon that knight
which he seems to have done by
hority, the champion expressing
escence nor reluctance; this being
oundation for the story on which
interest of the tragedy of the Cid, al-
is in fact different from it in every
ct. So far from its having been
out of old affection, re-
occurrence of family feuds, we
Cid on marrying her, instead of
ıg the nuptials with the ardor of a
took her home to the house of his
he left her, after recording a
he would never "accompany
n er in the desert nor in the
should have won 5 pitched bat-
which declaration he rode forth to
frontier as a real knight errant in
ventures. Next to this he is found
in behalf of the king Don Fer-
astile, against Don Martin Gonzalez,
ion of the king Don Ramiro of Ar-
winning for his sovereign by his
city of Calahorra, which is in dispute
the kings. After this, feat follows
exploit exploit; he is knighted in the
sque of Coimbra, which is dedicated as
to St. Mary; and, again, on war being
by the emperor Henry and the French
ler the sanction of the pope, in order
l his king, Fernando, to do homage to
re for the crown of Spain, he wins fresh
by entering France by the passes of
d defeating first Count Raymond of
Toulouse, and then the whole
ance on French soil, so that the
abandoned by the enemy for ever, by
ror, and pope. After the death of
ando, the kingdom of Spain is divided
ill among all his children; Castile is
Don Sancho, the eldest son; to Don
Leon and part of the Asturias; to Don
alicia and the new conquests of Por-
Doña Urraca, the city of Zamora, and
Elvira, that of Toro; the Cid being es-
bequeathed and ordered to attach himself to the eldest, Don Sancho. In consequence of this disposition of his services, he does not shrink from aiding his master in dispossessing both his brothers of their kingdoms; the one of whom, Don Garcia, is sent in chains to the fortress of Luna; the other, Don Alfonso, is compelled to become a monk at Sahagun, whence, however, he escapes to the Moorish king, Alimaymon, of Toledo, who receives him in all honor. During all these usurpations, the Cid had constantly urged the king to abide honorably by the provisions of his father's will; but his loyalty had not permitted him to proceed further than remonstrance, until Sancho, advancing in violence, set himself to strip the doña Urraca also of her dominions, when he positively refused to share in the war, and was banished the realm; nor, though shortly afterward recalled, would he ever bear arms against the princess or her city. Sancho, however, nothing daunted, proceeded to besiege the town, and, during the time while it was beleaguered, was murdered by the traitor Don Vellido Dolfos, not, it is said, without the privity of Don Alfonso, who on his death succeeded to his dignities, and to the reversion of the services of the Cid, which belong of right, it seems, according to all the legends, to the possessor of the crown of Castile. Some of the accounts here vary from the others, and make King Don Alfonso give to the good knight his own daughter, Doña Ximena, in marriage; and it remains doubtful whether the Cid had in fact two successive wives Ximena, or whether the second story is a mere renewal, slightly varied, of the first. Be this as it may, the Cid soon declines in favor with the new king, who banishes him and deprives him of his wife, and all the treasures which he had previously bestowed upon him; whereupon he departs with 60 pennons of his knights and vassals, seizes and fortifies the stronghold of Juballa in the Moorish territory, and from it levies war in all directions, except against his own country, as if he were an independent prince; takes the town of Valencia; fights with the kings of Aragon, and with the French of Savoy and Navarre; but never fails in his allegiance to his country or his king, in spite of the dishonor which he undergoes at his hands. Ultimately he is reconciled to Don Alfonso, his wife is restored to him, and he returns to court, where, shortly after his restoration, his two daughters, Doña Elvira and Doña Sol, are given in marriage by the king to the two brothers, the counts of Carrion, who seek them only in order to obtain the vast treasures won by the valor of the Cid, which are given up to them as their dowry, and in order to gratify a petty spite and jealousy against the noble house of Laynez. Immediately after the nuptials, the felon lords carry away their brides into a desert place, where they strip them naked, beat them nearly to death with bridle reins and horsewhips, trample them under foot, fearfully mutilating them with their great spurs, and leave them tied to trees, to perish of starvation.

The crime is detected, and the ladies are rescued, by a faithful old servant of the Cid; the false brothers are summoned before the cortes assembled by Don Alfonso, and, a judicial combat being ordered between them and their uncle, as defenders, and the knights of the Cid as accusers, they are ignominiously defeated, forced to deliver up the treasures, and, their miserable lives being spared, as not worth the taking, are driven out in utter disgrace. The last exploit of the Cid is the taking of Murviedro, the ancient Saguntum; after which he dies in Valencia in the year 1099, the 54th of his age. But his exploits and adventures do not end with his life, which fact would clearly establish its mystic and legendary nature, if it were open to doubt from the character of the earlier narrative. Now that the great chief, whose prowess alone had for so many years defended Castile and Leon against the Moors, was dead, those kingdoms could no longer be made good against the infidel; so they armed the corpse of the dead hero cap-a-pie in his mail, with his shield about his neck and his lance on his thigh, mounted him on his war steed Babieca, and marched with him through the land, the enemy flying everywhere from before his face, until they brought him to Castile, where he lies in a tomb honored by kings and princes, through all ages, with the faithful Ximena by his side, and his good horse Babieca buried under the trees before the door. Nor have the infidels, ever since, dared to disturb the soil where that good knight reposes.—Mr. Ticknor, in his "History of Spanish Literature," indicates various important lives of the Cid. The "Poem of the Cid" was originally published by Sanchez in the first volume of his valuable *Poesias Castellanas anteriores al siglo XV.*, (Madrid, 1779-'90, 4 tom. 8vo.; reprinted by Ochoa, Paris, 1842, 8vo.). At the beginning of the 16th century all romances on the Cid were collected by Ferdinand of Castile; editions appeared at that time by Escobar and Pedro de Florez, and a complete collection is found in Augustin Duran's *Romancero general* (1828-'52). The most accomplished translator of the Cid whom England has produced is Mr. J. Hookham Frere, who officiated for some years as British minister in Spain, and whom Sir James Mackintosh has pronounced to be the first of English translators. Mr. Frere's translations are to be found in the appendix to Southey's "Chronicle of the Cid."

CIDER, a liquor made of the juice of apples. The apples from which cider is made should not be permitted to fall on the ground; they ought to be hand-picked, or, if shaken from the tree, coarse cloths or straw should be placed under it. All prematurely ripe and unsound apples should be rejected. If the weather be fine, the fruit may be exposed in the open air, and if not, in sheds or lofts, until it becomes thoroughly ripe. The celebrated Newark (N. J.) cider, the price of which is at least double that of any other kind sold in the West Indian and southern markets, is made entirely from the Harrison
apples, although much cider is mad
district from other kinds of apples,
known as champagne cider, refined
The ridge between Newark and Elizal
known as a red-kellis hardpan soil,
the Harrison and Canfield apples of
dinary quality for cider making, but
sert fruit they are of little value. Tl
however, contains a much larger perc
alcohol than almost any other kind
Small quantities of quinces are oc
added to Newark cider, which, in ti
tion of some persons, improves its flav
apples are sweated, and permitted t
fore being ground for cider making.
ity and strength of the cider will be
proved in consequence of the appl
with 6 or 8 per cent. of water. The
cider is made from apples containing
est percentage of juice. The kind l
crab cider is in high repute, and is n
the apple known as the Virginia cr
slightly astringent, light colored, k
and holds its carbonic acid in bottle b
any other cider, seldom or never beco
bid. Cider is made in all parts of t
from various kinds of apples, but th
above are the best kinds, not requiri
dition of alcohol, artificial sweetening
factitious amendments.—The juice of
contains in watery solution a large qu
saccharine matter, in addition to v
getable proximates. The process o
tation simply converts the sacchari
into alcohol. The color of the cide
materially varied by the manageme
pulp, and its quality will be deteriorat
proportion to the increase of its col
fact may be thus explained: If an
broken, on exposing it to the atmosph
become brown, which is caused by
taking up oxygen, thus causing it to
the same change as does sugar in
when converted into molasses; and
molasses may not be called strictly a
sugar, still it is sugar containing a larg
of oxygen than is to be found in th
line portions. The difference betw
and loaf sugar is not greater than
ference of flavor between the juice
suddenly from an entire apple and t
from an apple previously ground,
some time exposed to the atmosphere.
ing says that "the pulp should remai
from 24 to 48 hours, or even long
weather is cool, in order to heighten
and increase the saccharine princip
then put into the press (without w
straw), from whence the liquor is
through hair cloth or sieves, into
clean, sweet, sound casks." Cole rec
leaving the juice a long time with the
which gives a very brown cider; b
colored cider is now preferred. The in
pervading the pomace is more

[illegible] of the atmosphere than [illegible] it. Different kinds of [illegible]ring in flavor, but from [illegible] two [illegible] varieties may be made, by [illegible] the juice before any of color [illegible], and the other after the [illegible] of the pomace to the atmosphere before [illegible]ressing its juice. If, instead of the or[illegible], requiring the apples to be ground [illegible] litate the expression of the [illegible]joint presses should be used, [illegible] like the knee-joint of a print[illegible] constructed as to squeeze each ap[illegible], and to feed the apples through [illegible] or hopper, discarding the pomace [illegible]ssed, the juice would be of a [illegible] color. No oxidation would [illegible]ue, and the after fermented re[illegible] of a quality entirely superior to [illegible]y the ordinary method. Professor [illegible] "It is true, that during its fer[illegible] the intestinal motion of the mass will [illegible] icles to come in contact with the [illegible] and thus give it both the flavor of [illegible]r, but not to so great an extent [illegible]pple is first ground to a pomace, [illegible]sing the juice; and hence the ci[illegible] the toggle-joint presses, which act at a time, is very superior to that [illegible] ordinary method."—The usual [illegible]turing cider may be thus descri[illegible] cider mill, worked by horse [illegible] with a grating machine, which [illegible] apple into a pulp or pomace. [illegible] placed on a properly constructed [illegible]ich the juice is expressed. That [illegible] "droppings," or unripe apples, is [illegible]verted into vinegar, the saccharine [illegible] sufficiently perfected to form a [illegible] of alcohol, and the acetous fer[illegible]ing in early. The riper or better [illegible] alone should be used for cider [illegible] remarks made relative to the in[illegible] on the juice will suggest the [illegible] the proper color. The juice [illegible] in barrels, and these in a cellar [illegible]perature will not fall below 60°, [illegible] above 75° F. An active saccharine [illegible] will commence in a few hours; [illegible] be permitted to continue with the [illegible] until the hissing sound, so readily dis[illegible] re carbonic acid gas is escaping, The cider may now be racked or into clean barrels, separating it from [illegible] and again suffered to ferment after [illegible]ged up" for a few days, the bungs being loosened as before. This fer[illegible] will be of short duration. The cider [illegible] racked again, the bungs should be [illegible]losed, and if intended for draught use it be kept in a cool cellar; if intended for [illegible] it should be bottled early in the spring. [illegible] rule is to do so before the appear[illegible] blossoms. This prevents an undue [illegible] or acetification, and secures a pro[illegible] of life in the bottle. Bottlers in cities sometimes use ripening agents, but for well made cider, bottled at a proper season, these are unnecessary. Isinglass, fish sounds, &c., are sometimes used to clarify and refine cider. All these, however, may be dispensed with if the cider is well made, and the rules before given strictly adhered to. Some of the larger manufacturers ferment in a chain of vats placed at different elevations, so that it may be run by its gravity from one vat to the other during the process of racking, and be barrelled from the lowest vat.

CIDER MILL, a machine for crushing or grinding apples preparatory to making cider. The earliest appliance for this purpose was a trough, in which the apples were reduced to an imperfect pomace by rolling them with a heavy cylindrical stone, or by pounding them as in a mortar. The English cider mill consists of a pair of coarsely corrugated iron cylinders, from which the apples fall to a second pair, closer together and finer in their surfaces, through which they pass, finely mashed, to the pomace vessel underneath. The mill until within a few years mostly used in the United States, and known as the nut mill, consists of a pair of upright log cylinders, 20 inches in diameter, properly adjusted for revolution, and close together in a strong framework. The upper end of one of these receives a lever extending to the horse circuit for the application of the power, while its body is armed with two or three lines of spirally arranged, cog-like projections, which serve the double purpose of clutching in the apples and turning the other cylinder by means of properly formed cavities mortised into its circumference. A hopper arranged at the required angle for the proper discharge of the apples, as they pass down to be subjected to the thorough mashing they receive in going through these cylinders, completes this machine, which, if the parts be truly and firmly secured in their places, serves its purpose very satisfactorily. The machine known as the grater mill was introduced in 1825, and, it is believed, was invented in the western part of the state of New York. It consists of a horizontal cylinder, armed with numerous short spikes, and revolving at a high velocity under a concave armed with similar projections; the apples in passing between these surfaces are therefore subjected to a grating rather than to a crushing process, as in the older machine. In 1852, Mr. W. O. Hickock, of Harrisburg, Penn., invented a portable cider mill, consisting of a pair of small horizontal cylinders, armed with small, spirally-arranged teeth, or spikes, revolving close together, and the one at a higher velocity than the other. The apples, after being broken by the action of a coarsely fluted roller revolving against a table under the hopper, are therefore, in passing through these cylinders, both bruised and grated into the required pomace. It is worked either by hand or horse power, is capable of grinding 100 bushels of apples per day, occupies only the space of a few feet, and can be transported on a light wagon from one neighbor to another as desired. So great is the favor with which this mill has been received, that a thousand of them have been sold by the inventor in one season; while portable cider mills of slightly different patterns—some being simply spiked cylinders, against which the apples are carried and held till grated by reciprocating plungers, while others are more or less like Mr. Hickock's machine—are now made by nearly all American agricultural implement manufacturers.

CIDER PRESS, a strong framework with 2 vertical screws worked alternately by a lever, or simultaneously by a toothed wheel between them gearing into their nuts, down upon a heavy platen, under which the pomace is placed either in a wooden case with long narrow openings, or in a pile secured at the edges by laps of straw or haircloth, for the expression of the cider. In the portable cider mill, the press is constructed in the same framework with the mill, and generally with but one screw, as the case in which the pomace receives its pressure is necessarily of small dimensions.

CIENFUEGOS, Nicasio Alvarez de, a Spanish poet and dramatist, born in Madrid, Dec. 14, 1764, died at Orthez, in France, in July, 1809. His plays have now almost disappeared from the Spanish stage, but were popular at the time of their appearance, especially *Pitaco*, which opened for the author the doors of the Spanish academy. At the time of the French invasion (1808) he was sentenced to death by Murat; but the sentence was commuted to transportation to France, where he died a few days after his arrival.

CIGAR (Span. *cigarro*), a cylindrical roll of tobacco for smoking, made of shreds of the leaf divested of fibres and stems, enveloped tightly in a single leaf, acute at one end and truncated at the other. A diminutive cigar (*cigarrito*) is also made of chopped tobacco wrapped in unsized paper. In the East Indies a sort of cigar called cheroot is also made with both ends truncated, and with the advantage of not deteriorating on being lighted a 2d time.—The smoking of tobacco is not only the most general but the most ancient mode of using the plant. When Columbus landed in the island of Hispaniola, his scouts reported that in their explorations they saw the natives smoking a plant "the perfume of which was fragrant and grateful;" and they subsequently learned that, from the earliest ages, it had been the custom of the natives to offer it in the sacrifices to the divinity, under the belief that its aroma was more grateful to him than any other incense. The priests, also, before declaring the oracles, were in the habit of intoxicating themselves by its means; and the medicine-men employed it in divining the nature of maladies. The Spaniards acquired a knowledge of its virtues, and on their return home introduced it into Spain and Portugal; and it was while ambassador of France to the court of Lisbon in 1560, that Jean Nicot became acquainted with it and its u
Flemish merchant, who had for
expedition to America; and by
sented to the grand prior and
Catharine de' Medici, whence it
names then in vogue of *l'herbe*
prieur and *l'herbe de la reine*,
eventually merged into that of *l'her*
enne, or "the Nicotian weed," which
to this day, poetically and botanical
about the same period, samples of
brought into England by Sir Fra
and the use of it made fashionable by
Raleigh and others who had acquire
for it in Virginia, where it held an
place in all Indian ceremonies.
aborigines the usual mode employed
ing this weed was by means of holl
and pipes made of wood and decor
copper and green stones. To depriv
acridity, some were wont to pass
through bulbs containing water in wh
tic and medicinal herbs had been infu
ander ascribes this invention to the Per
Magnenus rather attributes it to the
English, to the latter of whom at
credit of having invented the clay
modern times.—It has been contended
writers of eminence that the tobacco
its employment as a narcotic are indige
to some parts of Europe and Asia.
thinks it was known in Europe many
fore the discovery of the new world
serts that many plants had been f
Ardennes; but Magnenus claims
transatlantic, and attempts to allay
doubts by suggesting that the winds h
less carried the seeds from one contine
other. Pallas says that "among the
and among the Mongol tribes who
most intercourse with them, the
smoking is so general, so frequent, and
come so indispensable a luxury; the
purse affixed to their belt so necessar
cle of dress; the form of the pipes, fro
the Dutch seem to have taken the
theirs, so original; and lastly, the pr
of the yellow leaves, which are mer
to pieces, and then put into the pipe,
liar, that they could not possibly deriv
from America by way of Europe, esp
India, where the practice of smoking
general, intervenes between Persia and
Meyen also states that "the consum
bacco in the Chinese empire is of in
tent, and the practice seems to be of
quity, for on very old sculptures I hav
the very same tobacco pipes which are
Beside, we now know the plant which
the Chinese tobacco; it is even said
wild in the East Indies." From other
ties, however, we learn that the yellow
of eastern Thibet and western C
leaf of the *nicotiana rustica*, or com
tobacco, while that of central and
India is the *nicotiana tabacum*, or

militating
y. is certainly
in a country so impervi-
and customs as China,
obtain to such an extent, for,
" the practice is so uni-
from the age of 8 or 9
to her dress a small
old tobacco and a pipe." But,
e of the old or new world, the
has spread, and its consump-
every quarter of the globe, in
portion than any other article of
Among all nations and in all
be found, from the highly refined
aded and ignorant; and in spite
counterblasts, legal enact-
, religious crusades, and
sts, it still flourishes; every day
ption, and almost every
—The best tobacco for
grown in the western end of
and is known as the *vuelta*
t most in vogue there being the
da. That which is raised east
ed *vuelta arriba*, and is of an
The most noted *vega*, or plan-
d near the town of Santiago de
lled Yara. The vuelta abajo is
viz.: 1, *calidad*, or *libra*,
color, flavor, elasticity, and
leaves, rendering it desirable
2. *ynjuriado principal*, or firsts,
vor and is usually of a lighter
table for wrappers; 3, *segun-*
de poorer in every partic-
ngs and inferior wrappers;
thirds, which are generally em-
ngs; 5, *quartas*, or fourths, also
illings. The choicest tobacco is
the banks of rivers which are
overflowed. They are called *Lo*
do, and *Pinar del Rio*, and the
inguished from all others by a
h is found in the creases of the
island of Trinidad also produces a
article of the same sort. In Mex-
quantity is raised, but entirely for
sumption, its exportation being for-
The tobacco used for manufacturing
cheroots is the produce of the island
and is considered nearly equal to that
A very superior quality is also raised
vince of Kadoe in Java, "where it is
a naturally rich soil, alternately with
without manure." In western Asia,
n at Latakia in Syria, and that of Shi-
, are most highly prized. In the
Gelderland, in Holland, about 2,000,-
are produced, the larger portion of
purchased by the French govern-
remainder being exported to North
and even to Cuba. In Connecticut
superior article for the exterior
grown, and much of it shipped to
der being employed mostly in

New York for the same purpose. These peculiar varieties are valuable on account of the fineness of the leaf and its freedom from thick fibres. Many experiments have been made in transplanting the seed of the Spanish tobacco to various parts of the world, particularly to the middle states of the American union, and in some cases with marked success. It has been found necessary, however, to renew the seed every 2 years, as after that period the plant loses its original odor and flavor. In Maryland large sums are expended in this way, with most profitable results.—Although cigars are of very ancient origin in the West Indies, they were not generally known in Europe until the beginning of the 19th century. In fact, of all the various works on gastronomy and the pleasures of the table, written and published from 1800 to 1815, not one speaks of this now indispensable adjunct of a good dinner. Even Brillat-Savarin, in his *Physiologie du goût*, entirely ignores tobacco and all its distractions and charms.—As the best tobacco is grown in Cuba, so also the best cigars are made there. Previous to 1820 the manufacture was a government monopoly, but since that period the trade has been open; but so great is the demand that very little competition exists among the manufacturers. The house of Cabanas has been for many years at the head of the trade, and the cigars bearing their brand invariably command the highest prices, in some cases as high as $200 per 1,000 being paid for them in Havana, while the same quality from any other manufacturer would with difficulty be sold at $150. The brands affixed to Havana cigars are entirely arbitrary, and are rarely continued for any great length of time.—In the Philippines, the tobacco and its manufacture are a close government monopoly. The best quality is produced in the northern parts of the island of Luzon. It is grown under the supervision of government officials, and is taken from the growers directly, a liberal price being paid for it. That grown in the southern group known as the Visayas is of an inferior quality, and is sold to merchants holding a permit "to purchase at the shipping ports, and transport to Manila for sale to the government." The Luzon tobacco is classed and paid for by the government at the ports whence it is shipped to Manila; but the merchants buying in the southern islands transport it to Manila at their own risk, and then take the chances of its being classified much lower than they have purchased it. Being under heavy bonds to deliver all they purchase at the government storehouses, but little smuggling is carried on, the risk being greater than the gain. There are 3 factories for manufacturing cigars—1 in Manila, where 7,000 females and 1,200 males are employed; 1 in Cavite, in which 5,000 operatives, mostly females, are engaged; and 1 in Malabon, which gives employment to about 2,000 more, also females. These operatives are paid by the piece. It is supposed by many, in consequence of the

soporific effect produced by using cheroots, that opium is employed in preparing the tobacco in these factories, which is an error, no admixture of any kind being permitted. A very large amount of tobacco of an inferior quality is consumed on the islands, the better kinds being generally exported. Of cheroots, the major portion are of the quality known as No. 2, the factory price of which is $8 per 1,000. In 1856 the export to Spain and Great Britain was 84,983,000; in 1857 it amounted in the aggregate to 123,544,000, the great increase being induced by the low rate of exchange which has ruled for some time past at Manila. For a few years past some fancy brands have been manufactured, but the quantity is small, and although the article is somewhat better, it is not sufficiently so to cover the greatly enhanced prices. In consequence of the demand being greater than the supply, the government have lately established a system of sales by auction, as the fairest mode of distributing the stock among the applicants.—In every large city throughout the United States, immense numbers of persons are engaged in this manufacture. According to the census of 1850, nearly 11,000 persons, of whom more than one half resided in New York and Pennsylvania, were engaged as tobacconists and cigar makers, since which time the number has more than doubled. Of these, not a very large number were foreign immigrants. During the years 1845, 1847, and 1852, there was but one cigar maker among the 750,000 passengers reported as arriving at the American ports. Great skill has been attained in the American factories in making cigars; so much so that it is difficult to discriminate between the genuine and the spurious article, excepting by trial, and even then, in some cases, the nicest taste fails to detect the difference. Many persons engaged in this business import the finest tobacco from Cuba, employ the Connecticut leaf for wrappers, and produce an article equal in appearance to the very best made in Havana. In Bremen and Hamburg, immense numbers of cigars are made of very inferior tobacco, and shipped to every point of the habitable globe at very low prices. The city of Bremen, which was among the first to adopt this branch of industry, has now become one of the first markets in the world for the sale of cigars, over 4,000 persons being employed there in their manufacture, and the exports exceeding 300,000,000, valued at about $2,000,000. In Spain, the manufactories at Seville have attained a high European reputation, and being protected by government, very nearly monopolize the trade. The employment of female labor in the manipulation of this article is one of its noticeable features; and it is work particularly adapted to women, requiring great dexterity and peculiar delicacy in the handling.—The consumption of cigars extends all over the globe, and increases yearly in a wonderful ratio. According to a calculation made by the American consul at Havana, and
embodied in a report to the secr
it is computed that in the island
1,460,000,000 cigars, or 10 a day f
son, are annually consumed by the
and residents. In 1847, Cuba exp
parts of the world the enormous
1,982,267,000 cigars. This, howe
exceptional case, arising from the
superabundant crop of 1846, as p
succeeding years do not sustain
The exports in 1853 were 142,567,
237,850,000; and in 1855, 251,5
France the consumption of tobacc
is one of the principal sources of re
early as 1674 a monopoly of the
granted to Jean Breton for 6 years
of 700,000 francs; in 1720 the I
pany paid for the privilege 1,500,00
annum; and in 1771 the price was
25,000,000 francs. In 1856 the reve
from the trade by government, wh
sumed the monopoly, was 164,000
Beside France, there are 13 ot
states where the tobacco trade
ment monopoly, namely: Austria,
cily, Sardinia, Poland, Papal State
Tuscany, Modena, Parma, San
Lichtenstein. The government
Austria has been extended into Hu
1850. The income derived from it
the Austrian government was abo
000, showing an increase over 1851 of
The cigar manufacture was first
in the Austrian state manufactori
From 1814 to 1856 the consumpti
was 6,061,776,670. The manufact
performed by hand; but since 185
efforts have been made to introdu
ery for some of the preparatory w
spreading out and polishing the leav
pers, &c. The total importation of
the United States in the year endi
1857, was 560,043,000, valued at
—During the railway panic in Engl
the diminution of the sale of ci
increase in the consumption of
bacco, was striking; and the same
in the sale of cigars took place in
during the monetary crisis of 1
poor man, addicted to smoking, ta
not from choice but necessity; as
dependent the humble pipe is aba
the more costly cigar is assumed."
vation of the tobacco plant and its
into cigars is exceedingly profita
following exhibit by a Cuban plante
He estimates that 600 lbs. of tobac
75,000 cigars (allowing 8 lbs. to
which, at $10 per 1,000, amount to
cost of the leaf is $300; man
$2 50 per 1,000, $187 50; total
Profit to the manufacturer, $262
active substance or chemical ingr
bacco or tobacco smoke," says Pro
ston, "those by which all its
are produced, are 3 in number:

tile alkali, which exist in the natural
n empyreumatic oil, which is produc-
he burning of the tobacco in the pipe.
acrid and disagreeable to the taste,
nd poisonous. The volatile oil is
y distillation, and possesses the odor
, and a bitter taste. On the mouth
t it produces a sensation similar to
d by tobacco smoke. When applied
. it occasions sneezing; and when
y, it gives rise to giddiness, nau-
nclination to vomit. The vola-
is an oily, colorless, alkaline liquid,
heavier than water, and bears the
icotine. It has the odor of tobacco,
rning, long-continuing tobacco taste,
a narcotic and very poisonous qual-
or is so irritating, that it is diffi-
in a room in which a single drop
orated. Thus three active chem-
nite their influences to produce
e ts which are experienced dur-
of tobacco. All three are con-
le proportions in the smoke of
. The form and construction
among other circumstances, in-
proportion of these ingredients
e contains. Thus the Turkish
es, in which the leaf burns
smoke is made to pass gently
ugh water, arrest a large propor-
oisonous vapors, and convey the
much milder form to the mouth.
of the German pipe retains the
of the oily and other products
tobacco, and the long stem of
has a similar effect. The
sh clay pipes retain less; the
iron) pipes of Thibet, by be-
bring still more of the constitu-
ild Chinese tobacco to the mouth
while the cigar, especially if
end, discharges directly into the
smoker every thing that is produc-
burning. Thus the more rapidly the
and the smoke is inhaled, the greater
rtion of the poisonous substances
drawn into the mouth; and, finally,
va is retained, the fullest effect of
narcotic ingredients of the smoke
iced upon the nervous system of
It is not surprising, therefore, that
have been accustomed to smoke
ecially of strong tobacco, should find
both tame and tasteless. Such per-
an almost constant state of narcotism
drunkenness, which must ultimately
health even of the strongest. The
tobacco does not experience the effects
nous oil which is produced during
of the leaf. The natural volatile
otine are the substances which act
. These, from the quantity of them
involuntarily swallows, or absorbs,
e, and gradually weaken his
on." The proportion of nicotine is smallest in the best Havana tobacco, and largest in the Virginian and French. Being volatile, by the process of drying and curing it escapes slowly into the air, from which the chemist argues that "the manufactured cigar improves by keeping, and like good wine, increases in value by increase of age." To this creed, however, the Cuban does not subscribe, for the invariable rule among the most industrious smokers is to prefer those cigars which have just come from the workshop; and it has been the custom for many years of the American connoisseur to place his stock of cigars in a close tinned box, which he generally stows away in an apartment near the ground, in some cases even in the cellar. "In habitual smokers," says the celebrated Dr. Pereira, "the practice, when moderately indulged, provokes thirst, increases the secretion of the saliva, and produces that remarkably soothing and tranquillizing effect on the mind, which has caused it to be so much admired and adopted by all classes of society, and by all nations, civilized and barbarous. Smoked to excess, and especially by persons unaccustomed to its use, tobacco produces nausea, vomiting, in some cases purging, universal trembling, staggering, convulsive movements, paralysis, torpor, and death." The effect it produces on different constitutions is various. On some it has a soothing and tranquillizing effect, restraining them from an indulgence in intoxicating drinks, to which they would otherwise be liable, as in Turkey and the East Indies. On others it is exhilarating, provoking thirst, and inevitably leading to excess in drinking and intoxication, as evidenced in all moderately cold climates. Use and abuse, however, only serve to increase its votaries, and the more it is anathematized the more vigorously do they puff it. To sum up its various virtues and defects, we can appropriately quote the apostrophe of that quaint old bibliophile Burton, in his "Anatomy of Melancholy": "Tobacco, divine, rare, superexcellent tobacco, which goes far beyond all the panaceas, potable gold, and philosopher's stones; a sovereign remedy to all diseases. A good vomit, I confess; a virtuous herb if it be well qualified, opportunely taken, and medicinally used; but, as it is commonly used by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purger of goods, lands, health; hellish, devilish, and damned tobacco; the ruin and overthrow of body and soul." (See also SNUFF and TOBACCO.)

CIGNANI, CARLO, a painter of the Bolognese school, born in Bologna in 1628, died at Forli, Sept. 6, 1719. He was a pupil of Albano, and passed a number of years at Rome, Florence, and Parma, studying the works of Raphael, and particularly of Correggio. On the establishment of the Clementine academy by Pope Clement XI. in 1708, he was appointed the director. Among his principal works are, the "Assumption of the Virgin," an immense fresco in the dome of a church at Forli, which occupied him 20 years; the "Entry of Pope Paul III. into

Bologna," "Francis I. healing the Lepers," the "Nativity," the "Virgin and Infant enthroned," 4 subjects from sacred history in ovals, supported by angels, all at Bologna; "Charity," and the "Chastity of Joseph."

CIGNAROLI, GIOVANNI BETTINO, one of the famous Italian painters of the 18th century, born at Verona in 1706, died in 1772. His best works are in the cathedrals of Pisa, Bergamo, Mantua, and in the churches of his native city and of Ferrara. He educated a numerous school at Verona, and received several invitations to visit foreign courts, which he invariably declined. In style he resembled Carlo Maratti, but formed himself on the works of Guido and Correggio. He was a man of literary culture, and wrote with discrimination and taste on various subjects.

CILIA (Lat. *cilium*, an eyelash), organs abundantly found in all the individuals belonging to the class of microscopical animalcules—the most minute and the lowest in organization of all created beings. Examined by the microscope, these remarkably delicate organs are seen to be in incessant vibratory action, and hence they are usually described as vibratile cilia. In this lowly class of animals the cilia appear to perform 3 very important functions: 1, their vibration causes a vortex in the water, by means of which particles of food in the phytivorous species, and smaller animalcules in the carnivorous tribes, are brought unresisting to the mouth; thus are they the fruitful agents for the procuration of food; 2, they constitute the sole organs of locomotion; and 3, they are the respiratory organs. In consequence of the general minuteness of animalcules, it is very difficult to discern the precise kind of motion incidental to the vibratile cilia; the superior size, however, of the members of the class *rotifera* has left nothing to be regretted on this account. If the water containing specimens of the common wheel animalcule (*rotifer vulgaris*) be slightly poisoned, sufficiently to interfere with their respiration, the cilia will be seen to move so very slowly that their precise action may be readily perceived. It will then be seen that the down stroke is a very rapid one—so rapid that, in a healthy vigorous state, it cannot be seen, the up strokes being alone visible; and placed on a rounded tubercle, as they are in *R. vulgaris*, their combined action gives the appearance of a wheel revolving, and hence the common name of the class; the up stroke is singularly slow. Striking the arm down quickly, and drawing it back slowly, is the best approximation to the true action of the vibratile cilia. The excellence of modern microscopes, and the improved methods of conducting the examination of difficult objects, have thrown a new light on this interesting subject. We now know that these remarkable organs are not restricted to the animal kingdom, but that, on the contrary, they are extensively developed in the lower plants, where they appear to perform two of the functions witnessed in the animalcules,
viz., locomotion and respiration. Th
tensively developed in the common
tiful fresh-water alga, *volvox glo*
the species of *conferva*, *closteria*.
these locomotive plants, by the a
careful management of the achr
nator, the cilia while the plant
tion become distinctly visible, but t
longer to be seen when the plant
Passing from the lowest to the hig
animal life, even among the *verte*
tile cilia are constantly found, but
their mode of arrangement. In t
cules, these delicate hair-like proc
to be attached directly to the
they form a part, but in the *mo*
the unmistakable evidence of
ment of epithelium as the prote
of certain organs. Thus the o
(*mytilus edulis*), and all the biva
of the fresh waters or marine, l
spiratory organs, the gills, cove
thelium, and in this particular situ
ways ciliated. So far as is at pre
these organs are constantly to be
nection with the respiratory fun
animals as high as the *vertebrata*,
mammalia and man, they are found
with other functions. The epith
coats the base of the frog's tongue
and if removed swims freely thro
of water by this agency; in the *batr*
ever, it is highly probable that the
important organ, adjunctive to res
to these organs vibratile cilia belo
all the classes from animalcules up t
the warm-blooded mammalia and in
organs are found in connection wi
thelium covering the mucous memb
trachea, and throughout the distri
bronchi; so far they are respiratory
also found on the epithelium of t
nose, and of the Fallopian tubes. T
markable part of their history re
told: they have been seen in acti
many hours after death in cats, d
pigeons, &c. In man there has bee
ished action apparent 60 hours after
in a tortoise they have been obser
motion 8 weeks after death, when
of the body was in a putrid c
must be quite apparent, therefore
possess and maintain motion altoget
tive of vitality, for they continue to
getically when all around them is no
but decomposing; and from this
should appear that their true pla
the vegetative organs of the body.
phenomena of their motion are ye
covered. (See ANIMALCULES.)

CILICIA, an ancient division of
bounded W. by Pamphylia; N. by
from which it was divided by the rid
Taurus, now the Kara-dagh and
dagh; E. by Syria, from which it wa
by the towering masses of Mount A

Alma-dagh; and S. by the channel of The W. portion, from its moun- character, was called Aspera (rough), E. portion Campestris (level). In its conformation, it is a long strip of land, g above 800 m. along the shore from , with a width from N. to S. rarely ex- 30 and never 50 m., descending from the of the Taurus mountains, with a due y exposure. The country between the the mountains and the sea consists, ac- to Xenophon, of a great and beautiful ll watered, and full of trees of all vari- d of vines, and produces much sesame, wheat, and barley. The rivers which all descend from the ridge of Mount to the sea, with nearly a due south- a, and have much the character of torrents, cutting deep trough-like in the lower country, exceedingly the snows by which they are fed, and seasons coming down from the hills floods. The principal of these rivers ydnus, famous for having nearly killed er the Great, who bathed in its ice-cold r a debauch, and for being the scene 's first interview with Antony. Ci- osed to have been at an early period y Phœnicians, which accounts for the cial and maritime habits of the popula- which they were early remarkable, and y adhered till a late period in Ro- ory. At so remote a date as the Persian Darius and Xerxes, the Cilicians and ians furnished the greater numerical, whole effective portion of the oriental o the Egyptian successors of Alexander rformed the like duty; while to the their piratical squadrons, whether act- ir own authority and under their own or pressed into the service of the dif- contending factions of the decaying , afforded constant employment, and constant source of uneasiness. Cæsar were both, at different times, pris- o these daring sea rovers. Cilicia, tributary to the kings of Persia, to according to Herodotus, it paid a tribute of 500 talents of gold, equal to about as much as the joint tribute of Mysia beside a present of 360 white horses, ject to a native race of princes of the ame of Syennesis. The wife of one of rinces, seduced by the younger Cyrus, l to him the difficult mountain pass, e Cilician gates, through which lies the d from the interior of Asia Minor to the the gulf of Iskanderoon, and the 2d pass yrian gates. In the piratical war, which sidered so important that the command s intrusted to Pompey, more than 20,- ites were taken prisoners. In 67–66 B. C., Campestris was made a Roman province pey. Cicero was employed at the head land forces in the interior of Cilicia, of he held the government, where he distinguished himself, and received from his soldiers the title of *imperator*. After this Cilicia Aspera continued to be governed by native princes till the reign of Vespasian, when it was reduced to a Roman province. The distinguished part which Cilicia played in the early days of Christianity, and her connection with the great, energetic, and eloquent apostle to whom she gave birth, can never be forgotten. Cilicia followed the fate of the eastern empire, and is now one of the eyalets or provinces of the Ottoman empire, under the name of Adana.

CILLY, Cilley, or Zilli (anc. *Claudia Celeia*), a district in the Austrian circle of Marburg, in Styria; pop. about 90,000, chiefly engaged in agricultural pursuits. The principal languages are the Wendian, the Carnolian, and the German.—The capital of the district, of the same name, is situated on the river San, and on the Vienna-Trieste railroad; pop. 1,800. It contains a gymnasium, a high school, a custom house, barracks, 2 convents, and trades in corn and wine. Its ancient name was derived from the Roman emperor Claudius, who is supposed to have been its founder.

CIMABUE, Giovanni, commonly called the "father of modern painting," born at Florence in 1240, died about 1802. He was of noble birth, and while a pupil in the school of the convent of Santa Maria Novella, discovered such an aptitude for painting that his parents allowed him to receive instructions, according to Vasari, from some Greek artists who were then restoring the old paintings in the convent chapel. On the other hand, Giunta Pisano, an artist of considerable merit, is said to have been his instructor; and as Guido da Sienna is known to have painted as early as 1221, Cimabue's claim to the distinction which tradition and the zeal of his countryman, Vasari, have conferred upon him, is by no means free from doubt. His models, however, were clearly Byzantine, and his earlier works are strongly marked by the characteristics of that school. His great merit consists in his efforts to break away from the formal monotony of his Greek models. The earliest of his works, a St. Cecilia, is still preserved in the church of San Stefano, and a large portion of the frescoes in the celebrated church of St. Francis in Assisi, commenced by Greek painters and continued by Giunta Pisano, are by his hand. Beside these, almost every great European collection contains a specimen of him. In the prime of life he painted his chief work, a colossal madonna and child, for the church of Santa Maria Novella, where it now hangs. The legend states that the Florentine populace testified their wonder and delight at this novel creation of art by carrying it in a triumphal procession to the church. Cimabue's fame thenceforth spread over Italy, and he established a school of painting, in which his ideas received a new development. He evinced a generous appreciation of Giotto, whom tradition says he discovered drawing figures upon the smooth surface of a rock while tending his sheep, and whom he took with him to Florence, and instructed to such purpose that the pupil soon outstripped his master. Cimabue improved little upon the Byzantines in his madonnas, but his patriarchs and apostles have a grand and impressive character. He is described as haughty and disdainful, and exceedingly proud of his lineage, as well as of his acquirements in literature and art.

CIMAROSA, Domenico, an Italian composer, born at Aversa, in the kingdom of Naples, in 1754, died in Venice, Jan. 11, 1801. He studied music under Fenaroli, a pupil of Durante, and soon became so celebrated for his operas composed for the Italian theatres that in 1787 the empress Catharine of Russia invited him to become dramatic composer to her court. He remained in Russia but a few years, however, for in 1791 we find him installed as director of the Italian opera at Vienna. It was here, in 1792, that he composed his opera *Il matrimonio segreto*, esteemed his *chef d'œuvre*, and which was received throughout Europe with great enthusiasm. A peculiarity of it is that brass instruments are excluded from the orchestra, and the other wind instruments are very sparingly used. The accompaniments, nevertheless, are of a rich and brilliant character. The career of Cimarosa in Vienna was cut short by the death of the emperor Leopold in 1792, after which he returned to Naples, where he produced some of his finest works, including *Il matrimonio per susurro*, *La Penelope*, *L'Olimpiade*, *Il sacrifizio d'Abramo*, *Gli amanti comici*, and *Gli Orazi*. In 1799 the royal family fled from Naples on the approach of the French republican army, and during the few months that the latter occupied the city Cimarosa avowed himself so openly in favor of the revolutionary doctrines of the age, that upon the return of the Bourbons he was thrown into prison, where he languished in close confinement for many months. Released in 1800 on condition that he would quit the Neapolitan territory, he repaired to Venice, where he died the following year, in consequence, it is said, of the treatment to which he had been subjected. This however may be doubted, as during his residence in Venice he brought out his opera *L'imprudente fortunato*, and had partly composed another called *Artemisia* at the time of his death. Among his works are 69 operas, 4 oratorios, 3 cantatas, 2 requiems, and a mass, beside much miscellaneous sacred music, and 500 detached pieces composed during his residence at St. Petersburg.

CIMBRI, a warlike and savage people of antiquity, appear first, in the history of the Romans, in the year 113 B. C. Together with the Teutons, they left their abodes in N. W. Germany in numberless crowds, with their families, wagons, and cattle, attacked their western neighbors, were repulsed, and, turning their arms southward, crossed the eastern Alps and entered Illyricum, then recently made a Roman province. Their original abode is not known. Some of the later historians suppose
Germans, like the Teutons, and inh
the shores of the North sea; so
and Pliny, who gave the name
Cimbrica to the northern part of
land. Others, like Sallust, suppose
Gauls; Greek writers connect thei
history with those of the Scythian
the Crimean peninsula; some moder
gard them as Celts and relatives of
in England. (See Celtæ, C
The consul Papirius Carbo first
the field near Noreia, in Styria;
the huge barbarians and their nu
whelmed the Romans, and their
spread terror all around. They
easily penetrated into Italy, but th
take their course westward, pass
Rhine, and pillaged Gaul. Anoth
army sent thither was also routed
their offer of alliance and request of l
jected by the Romans. Their new all
vetians, defeated the consul Longin
in the battle, while his legate was r
chief body of the invaders. They
in the direction of Italy, crowds of
ing them, and near the Rhone 2 ot
armies were defeated and their c
The way to Italy was open; terro
Rome. It then happened, for the
that city, that no candidate for th
appeared. But the Cimbri happil
other way, passed the Pyrénées, an
Spain for a couple of years; and be
turned, the victor of Jugurtha, Mari
regarded then as the last hope of
3 times successively elected consul
army, with which he advanced i
meet the approaching Teutons, whi
consul, Catulus, opposed the Cimb
arately passed the Alps and awaite
in the valleys of Italy. Marius, in a
lasted several days at Aquæ Sext
Provence), routed (102) the Teuton
allies the Ambrones, with immens
and hastened to the aid of his le
colleague in Italy. The terrible
passed the Rhætian Alps, gliding d
said, on their shields, had turned th
the Adige to pass its valley more
compelled the legions of Catulus
Marius fought a battle (101) on
fields, near Verona. The battle
barbarians formed an immense sq
with their shields, linked together
they were armed with helmets,
spears, and had 15,000 horse; th
formidable. But the torrid clim
the sun and the dust, and the tactic
mans, led by Marius, Catulus, and
came them; they were not only d
exterminated: 140,000 men were
their women fiercely defended t
and carts, which formed a kind of
When further resistance became
they killed their children, and then

ts of the Cimbric nation
mentioned by Cæsar as in-
. and by Tacitus, who speaks
to Augustus.
ERII, a c race of extreme anti-
ncerning whom there are numerous
of more or less plausibility, but con-
nothing has been established that
approach to certainty or truth.
have been first known or heard of
r, and on the shores of the Black
straits of Yenikale, between the
and and the Tauric Chersonese, or
early designated as the Cimme-
. According to Herodotus, they
from their abodes in the Crimea
ians, entered Asia Minor by mi-
the shores of the Euxine to the
d it during the reign of Ardys,
of Gyges, king of Lydia, 699 B. C.,
remained there until the times of
d Cyaxares, 616 B. C., when they
expelled, or were succeeded by a
at that period, when both were
er. (See CELTÆ, CIMBRI, Go-
DIA.)

I. Father of Miltiades, was banished
by Pisistratus, and during his ex-
riot races at the Olympic games.
n of the second triumph he al-
us to be proclaimed victor, and
permission to return to his native
after his 3d victory he was assas-
procurement of the sons of Pisistratus.
ous Athenian general and states-
about 510 B. C., died 449. He was
of Miltiades, and grandson of the pre-
His mother was Hegesipyle, the daugh-
lorus, a Thracian king. He is said to
rried his half sister Elpinice, but as
o other instance of such a marriage in
history, the truth of this assertion
doubted. Diodorus says, that on the
his father, in order to obtain the pa-
rpse for burial, he took his father's
prison as guarantee for the payment
f 50 talents inflicted on Miltiades; but
orities state that the imprisonment
lsory, as the debt descended to the
Athenian law. According to Cor-
pos, he obtained his liberation by the
a man of low birth, but of great
desired to marry Elpinice, and
pay the debt of Cimon if the latter
her away, and consent to her nup-
himself. Cimon at first rejected
posals, but afterward yielded to the
ntreaties of his sister. At the battle
(480) he distinguished himself, and
the regard of Aristides, who recognized
. of Miltiades natural and adventitious
s which might redound to the future
the conservative party of Athens, and
nce the influence of Themistocles.
and Aristides were placed at the
Athenian contingent to the Greek naval armament, under the supreme command of Pausanias, the Spartan regent. They so ingratiated themselves with the confederate Greeks, that on the disgrace of Pausanias, the supreme command was transferred to Aristides and Cimon, and the hegemony of Greece passed thereby from Sparta to Athens. His first use of his newly acquired power was to destroy the Persian garrison of Eion at the mouth of the Strymon, to capture Amphipolis, and to open that whole country to Athenian colonization. In 476 Cimon expelled from the island of Scyros the Dolopian pirates, and planted an Athenian colony in their place. His next feat of arms was to reduce Carystus, a city of Eubœa, and the island of Naxos. These victories gave him great influence in Athenian politics, which he threw into the scale of the aristocratic or conservative party, of which Aristides was the head. He contributed to the banishment of Themistocles, the leader of the opposite party. In 466 he won 2 decisive land and sea battles over the Persians at the river Eurymedon, on the S. coast of Asia Minor, when 200 Persian ships, out of a total of 350, were captured. Before nightfall he defeated a reënforcement of 80 Phœnician ships. According to Plutarch, these victories were followed by a treaty of peace, concluded by the Persian monarch, and containing the most humiliating conditions, but the historian Callisthenes disputes the statement. Thucydides is silent upon the subject, and some modern historians deny it altogether. These successes, and the death of Aristides, left Cimon without a rival at Athens. Thasos revolted in 465, and was reduced to obedience by Cimon 2 years afterward. Two events occurred about this time which brought about the temporary downfall of Cimon. The Athenian colonists on the Strymon and the Chersonese were destroyed by the Macedonians and the Thracians. Cimon was brought to trial for not avenging this injury after the subjection of Thasos; he was accused of having accepted bribes from Alexander, king of Macedonia. Pericles was one of the prosecutors, but Cimon was acquitted. While these events were occurring, an insurrection of helots took place at Sparta. Cimon, who admired the Spartans, persuaded the Athenians to send an army to the aid of their rivals. The Spartans insultingly dismissed the aid so generously offered, and the resentment of the Athenians naturally recoiled upon Cimon, who stood responsible for the original movement. His ruin was completed by his opposition to the democratic party on the question of curtailing the power and jurisdiction of the areopagus. Upon the victory of the popular party, under the lead of Pericles and Ephialtes, Cimon was ostracized about 459. In 457 a Lacedemonian army, posted at Tanagra, threatened Attica. It professed friendly feelings toward the aristocratical party of Athens, and hostility only to the then dominant democracy. Cimon, though an exile, begged to be allowed to fight in his tribe in defence of his country;

the Athenians, suspicious of treachery, refused permission. Cimon then besought his friends and retainers, as they valued his character, to do their duty. These friends carried Cimon's panoply to the field of Tanagra, and fell around it to the last man; the Athenians were utterly defeated. In 454, after 5 years of exile, he was recalled at the instance of his great antagonist, Pericles. He was employed in effecting the 5 years' truce with Sparta, 450 B. C. The next year he was intrusted with an expedition of 200 ships to avenge on the Persian empire the disasters the Athenians had lately suffered in Egypt. While besieging Citium, a town on the S. coast of Cyprus, he fell a victim either to disease or a wound. His lieutenants, while carrying his remains back to Athens, fell in with and defeated a fleet of Cilician and Phœnician galleys, and at the same time beat the Cyprians on land. Cimon was buried in Athens, and his tomb was visible there in the time of Plutarch (A. D. 100). He left 3 sons. His loss was a public calamity for Athens. The democratic party, which he had so strenuously opposed, gained soon after his death the upper hand, and accelerated the ruin of the country. In his private life he is spoken of by the ancients as the type of generosity, frankness, and affability. After the recovery of his patrimony, he kept a free table for all citizens of his district. He distributed alms in public with prodigality. At his own expense he laid the foundation of the long walls which joined the Piræus to the city. He beautified his private grounds, and threw them open to the public, who were allowed to pluck the fruit and flowers. He bequeathed to the Athenians a pleasure ground in the Ceramicus, which afterward became the seat of the famous academy of Plato. III. CIMON OF CLEONÆ, a renowned painter of the middle of the 5th century B. C., whom Pliny considered to have been the inventor of *catagrapha*, or drawing in perspective.

CINALOA. See SINALOA.

CINCHONA, Peruvian or Jesuit's bark, named in honor of the countess of Cinchon, the wife of the viceroy of Peru, who is said to have first carried the bark to Europe, where she used it successfully in the cure of intermittent fever about 1640. Soon after its introduction into Spain, the Jesuits began to receive it from their brethren in Peru, and through them it was spread over Europe, in consequence of which it was called Jesuit's bark. It is the dried bark of many species of the genus cinchona, all belonging to the natural order *cinchonaceæ*. The most esteemed are *C. micrantha* and *C. Condaminea*. In Brazil the *remigas* are species of great importance; and in French Guiana the *Portlandia hexandra* produces a bark of properties analogous to those of cinchona. Many other species are found in different countries of similar character. Until very recently, it has been impossible to determine with accuracy from which species of cinchona the different varieties of bark
were obtained, but late inv
the aid of chemistry have throw
light upon this subject, though
yet remains to be learned. It l
tained that the most powerful re
in these barks is an alkaloidal substa
in the best quality is called quinine, th
are less valued containing a smaller p
of this and more of an inferior alkaloid
nine. In an inferior variety still, the
sometimes gives place to a similar
aricine. For more than a century
vian bark came into use, it was suppo
ist only in Loxa in the ancient kin
Quito, and in a few neighboring local
in the year 1753 it was discovered i
other places of a corresponding elev
Loxa above the sea. Little advant
ever, resulted from this; but some 20 y
under the patronage of the Spanish
ment, researches were made in New
which resulted in the discovery of
species of cinchona. At a subsequen
supplies of the bark were obtained fr
sources, which are now shipped from
the South American ports, including so
in the Caribbean sea. Considerable
experience are necessary in collecting
to select those most valuable, and to
proper age at which a branch should
ticated. The bark is collected betw
and November. The tree is usually
and then stripped, which is the most
cal plan, as fresh shoots spring up fr
roots. But the Indians, to save
the trouble, often strip the bark entir
the tree while it is standing, thus d
altogether. The cinchona forests a
of such vast extent, embracing over
tude, and growing upon a soil which
appropriated to agricultural purposes,
is little danger of their entire extincti
bark must be dried quickly or it dete
This is effected by exposing it in so
place to the sun. The time required
purpose depends on the thickness of
and the age of the branch from whic
taken. In medicine it is much used a
particularly in the forms of quinine and
nine. It is valuable in cases of inte
fever, neuralgia, hooping-cough, &c.
extremely bitter taste, as have also t
and flowers. The bark of the root
the same virtues as that of the trunk.
year ending June 30, 1857, 1,832,340
Peruvian and Quilla barks were impor
the United States, valued at $386,252,
43,305 lbs., valued at $32,685, were re
The value of Peruvian bark imported i
land in 1856 was £311,861, and of the
£110,695.

CINCINNATI, the chief city of
of Ohio, capital of Hamilton co., t
populous in the Ohio valley, and at
the 5th in magnitude of the United
is situated in lat. 39° 6′ N., and long.

o the Ohio river, and to the
valley. The site of the city
le to commerce, comfort,
a natural plateau, through
rom the S. E. to the S. W.
m. in circumference, and is
ver into nearly equal parts. On
Cincinnati, and on the south are
Newport, separated by the Lick-
This great plain is entirely surround-
00 feet in height, forming one of
autiful natural amphitheatres to
where on the continent, from
v be seen the splendid pano-
below, with the winding
and barges, and incessant
its shores. No other large
tes affords such a variety
. Its site is one which
e chosen for its beauty, and
for the utmost facilities of
, and of drainage. On this
me of the most populous and pros-
America, concentrating in it-
s of a great extent of coun-
uring the raw materials of
to be again distributed through
result of such immense re-
a rapid growth in wealth
which will be best exhibited
of the city. The increase of
been as follows: In 1800, 400;
9,602; 1830, 24,851; 1840,
,436; 1858, 200,000. This
wth to 200,000 inhabitants in
passes that of any other city
of time, was first settled by
c. 1788. It was laid out by
New Jersey, under the patent
Symmes to what is called the
y. The town was first survey-
ed by Col. Ludlow, and its plan
of Philadelphia, with rectan-
losing blocks of convenient
on which it is built is com-
ins, the 1st 50 feet above low
ver, and the 2d 50 feet higher.
gton, which was the original nu-
buildings, stood on the east side,
te the mouth of Licking river, and
of the bank dividing these plains.
f Cincinnati was mainly built be-
, and on the river bank, and was
r several years of frame and log
h was the Cincinnati of 1800, a
unpromising village on the
, amid an uncultivated wilder-
eace which followed Wayne's vic-
battle of the Fallen Timbers, gave
rity to the Miami country. Then
growth of Cincinnati. In a few
ls, churches, banks, and factories
business city soon filled the lower
dwellings arose on the upper; then
ed them out; and for several years
s of the busy citizens have been gradually climbing the hillsides, and filling the little valleys of creeks, on the east and west; while on the hilltops, and far back in the country, are beautiful rural villages, which in time will be connected with the city, and form together the metropolis of the Ohio valley.—The first great step in the progress of the town was, doubtless, the improvement of navigation. To form an idea of this, we must go back to 1790, when the emigrants to the West were seen descending the Ohio in what were called arks, or flat-boats, fired into from either shore by the Indians, requiring weeks of time to accomplish the voyage from Fort Du Quesne (Pittsburg) to the falls of the Ohio, and landing amid enemies, in the dark forests of the Ohio. Such was the first mode of navigation. In 1794, a line of two keel boats (boats with keels and pushed by poles), with bullet-proof covers and port-holes, provided with cannon and small arms, was established between Cincinnati and Pittsburg, making the trip once in 4 weeks. The keel boat was the best and most comfortable boat for navigation on the Ohio, and this with the flat-boat were the sole means of conveyance on the waters of the Ohio and Mississippi. In 1811 the first steamboat was launched in the West, and in 1816 the first steamboat was built in Cincinnati. The steamboat changed the whole kind and character of navigation on the Ohio. Cincinnati at once began to build steamboats, and to trade with the most distant parts of the Mississippi valley. She became the mart of a vast commerce, and the centre of an immense transit. The voyage to distant places was made in only as many days as it had taken weeks; and suddenly 30,000 m. of river coast opened to her a commerce and traffic as extensive as if she had been placed on the shores of the Mediterranean or the Pacific. New Orleans, at 1,500 m. distance, and the tributaries of the Missouri at thousands, were as accessible to her as Rome was to ancient Alexandria. She became the point for the receipt, distribution, and transshipment of the immense surplus products of the great region to which she was a centre. The actual results of this on the commerce of the city may be exhibited in the statistics of navigation. Since 1816, the number of steamboats built in Cincinnati has reached nearly 1,000, being ¼ of the whole number built in the United States. The following are the arrivals, departures, and tonnage of steam vessels at Cincinnati in 1857: Boats built, 33, tonnage 9,500; separate steamers arrived, 357, tonnage 87,458; arrivals, 3,600; departures, 3,500. The average capacity of these boats is 250 tons. If they were all full, they must have carried 2,000,000 tons, the actual being much greater than the measured tonnage; and if flour be taken as the standard of value, the river imports and exports of Cincinnati must have reached $100,000,000. Some allowance must be made for deficient cargoes, which is, however, far more than counterbalanced by the land

carriage of articles which never touch the river. The exports and imports of the city are very nearly ascertained by the tables of the chamber of commerce, which give the amount of all the leading articles. The result is, imports, $80,000,000; exports, $70,000,000. The leading articles of import are coffee, sugar, molasses, merchandise, and iron. The principal exports are meats, oils, candles, soap, furniture, liquor, flour, and manufactures of different kinds.—In the exports the greatest part of the value and profit is made up of industry and skill, by which the raw products of the country have been converted into marketable merchandise. Accordingly, we find manufactures to be one of the great, if not the greatest, subjects of interest in Cincinnati. The raw material and facilities for this purpose are very abundant, and almost unequalled. Above, on the Ohio river, are exhaustless beds of iron, coal, and salt; and such is the ease of transportation that coal and iron are cheaper at Cincinnati than in any other of the great cities of the union. Hence, the business of manufacturing rapidly rose to importance, and the prosperous development of industry has proved one of the main sources of growth and profit to this city. Including the results of mechanical labor, the following is an aggregate view of industrial development in Cincinnati, from 1826 to 1858:

	No. of establishments.	No. of hands.	Value of products.
1826..........	400	2,950	$1,850,000
1840..........	1,594	10,608	17,828,651
1850..........	3,850	33,098	52,109,374
1857..........	5,000	50,000	80,000,000

Among these manufacturing establishments, the most conspicuous are those for the curing of animal meats, the manufacture of clothing, of furniture, and of iron. In the curing of meats (especially the products of the hog), and the minor products made from them, Cincinnati has long been famous, and time has not diminished either the amount or importance of this business. The number of merchantable hogs brought into Cincinnati in the last 10 years was: In 1849, 410,000; 1850, 393,000; 1851, 334,000; 1852, 352,000; 1853, 363,000; 1854, 421,000; 1855, 355,000; 1856, 405,000; 1857, 344,500; 1858, 425,000. This averages nearly 400,000 per annum, while in the previous 10 years the average was but little more than half this. The growth and profit of this business depend upon the skill and minute economy which has been obtained at Cincinnati by the long experience of its provision merchants. The hogs brought into Cincinnati weigh 85,000,000 lbs., all parts of which are converted into meats, oils, candles, soap, and various manufactures. Including the imports into Cincinnati of manufactured meats for re-distribution, the following is the aggregate value of the exports of various articles made from the hog, viz.: Pork and bacon, $6,476,621; lard, $1,282,453; lard oil, $1,817,480; candles, $1,334,972; soap, $208,940. Total products of the hog, $11,120,466. Thus the single export of the products of the hog from Cincinnati exceeds $11,000,000. The manufacture of iron in all its branches amounts to about $6,000,000; the manufacture of clothing to
000,000; the manufacture of furni
$4,000,000; the manufacture, or
and manufacture of domestic liquors
000. (See CATAWBA WINE.) The eno
tity of 530,000 barrels of whiskey wa
year at Cincinnati, and a proportiona
alcohol. The aggregate sale of all
quor reached $9,000,000. Since whi
from grain, and iron is produced in
is evident that the manufactures of
arise directly from the natural pr
are likely to increase with the deve
the country and the demand for t
of art.—Immediately connected
merce and manufactures, and agric
duction, are the lines of transit an
of locomotion. Of the navigation
we have spoken; but the enterpri
of Cincinnati soon saw that some
than mere mud roads was necessa
mit the products of their labo
wide expanse of the interior, whi
garded as a legitimate field for their
but through which no steamboat c
As the first emigrants descended t
flat-boats, so the first attempt to c
over the Alleghanies was with
Even iron and salt were thus carri
lonely mountains to a land wher
salt were as abundant in the earth
on the surface. Canals, turnpike
roads soon followed in their order;
ample was followed to a certain ex
neighboring states of Indiana and
Thus Cincinnati became a great cent
of commerce, manufactures, and pro
of long lines of intercommunication
distant regions of the country. A can
ing Cincinnati with iron ware or suga
it to the shores of Lake Erie or the low
a steamboat leaving the wharf may
niture to Kansas, to Arkansas, or to
The traveller who leaves in the m
in one day be borne by the locomo
the Mississippi, or in two days to
of New England. The bales of
move with rapidity over these v
road, and Cincinnati products thus
lines of radiation through the whol
Including those lines which come int
the city, and are in fact independent
are 9 main lines of railroad leading int
from as many different points of the c
comprising, before they reach their p
mini, more than 3,000 m. of road.
their connections, there are more tha
of railroad leading directly to and thr
nati. The eastern lines connect with
over the mountains to the Atlantic
northern, with all the towns of the
western, with St. Louis and the Missi
the southern, with the interior of K
be continued, by roads already c
to Knoxville and Nashville, Tenn.
owns property to the extent of

[illegible] The annual [illegible] physical and [illegible] of [illegible] ati has been [illegible] been accompanied by [illegible] of social, religious, [illegible] found in our American [illegible] churches of all Christian [illegible] Sunday schools and chari[illegible]tions, afford full opportunity for [illegible] worship and culture. For education, [illegible] there are 1 law [illegible] 6 medical schools, [illegible] colleges, 3 female [illegible] seminaries, and many semi[illegible] boys; beside the great system of [illegible] ols, w[illegible] ch are supposed by many to [illegible] th[illegible] of any city in the country. [illegible] be traced back to the early [illegible] by the national government [illegible] of education. Encouraged by [illegible], the state provided an ample rev[illegible] ation, for their increase and con[illegible] the city of Cincinnati gladly ac[illegible] these legal provisions, and has been [illegible] e with them large endowments for [illegible] athed by private citizens. [illegible] public schools has grown [illegible] large institution, containing all the [illegible] of a liberal and extensive education. [illegible] statistics of the public schools [illegible] ws: High schools, 2; intermediate [illegible] primary schools, 13. Enrolled pu[illegible]; in high schools, 384; in inter[illegible] schools, 1,197; in primary schools, [illegible]. Teachers, 261. The course of educa[illegible] ts all grades of advancement, from [illegible] nfant school to that of the classical [illegible] addition to these schools, the Catho[illegible] chools contain about 4,000 pupils, and [illegible] er are in the private schools and [illegible] re mentioned. In the aggregate, [illegible] has about 25,000 youth annually in [illegible] education, or about $\frac{1}{8}$ part of the [illegible] population. The attendance of all this [illegible] is not uniform and regular; but this is [illegible] portion of those who, in some part of [illegible] oy the benefits of education. The [illegible] ary elements of Cincinnati are such [illegible] rally found in large towns: lectures, [illegible] edicals, and the society of a large [illegible] of educated and active-minded persons. [illegible] antile library association has a library [illegible] volumes; the Lane seminary library, [illegible] volumes; the public school library, [illegible] volumes. The press of Cincinnati is [illegible] ed of 8 daily newspapers (3 in German), [illegible] s (6 in German), and 15 monthlies. [illegible] ti is, in general, well built, and is undergoing a transformation, which [illegible] probably result in a beautiful and mag[illegible] city. The new building material used [illegible] tures which supplant the old ones, [illegible] a gray sandstone of even hue, and without glare or gloom, presenting a neat and pleasant aspect. These new structures are rapidly rising, and the town is gradually ascending the hills, from whose tops handsome villas already look down on the bright panorama below. If this process should continue, the amphitheatre on the plain will be filled with business, the hills crowned with splendid structures, and the whole be not improperly called by its early name, the Queen of the West.

CINCINNATI, Society of the, an association formed after the peace of 1783, originally composed of officers of the American revolutionary army, and continued in their kinsmen and representatives. The revolution having been accomplished, this society was instituted as a monument of the memorable occasion. Its purpose was to cherish and perpetuate the mutual feelings of patriotism, benevolence, and brotherly friendship created by a common experience of the hardships encountered in achieving the freedom of their country, and establishing its rank among the nations of the earth. The movement, though chiefly commemorative, was not unmixed with motives of prudence and policy, was in unison with the spontaneous feeling of the army at the moment of its dissolution, and was conducted and controlled by men of tried virtue and wisdom. The guarantee of its character was that it was to receive the sanction and be under the guidance of Washington. Gen. Knox, as a person sharing in a singular degree the confidence and affection both of the army and its chief, composed the original draft, which is still extant. The meeting for organization was called at the quarters of Baron Steuben, at a place yet pointed out on the North river, N. Y. It consisted of the general officers in camp and regimental delegates from the respective lines, the baron as senior officer presiding. Several of the distinguished officers in the war were men of cultivated minds, to whom the ancient classic history and literature were favorite reading; and they now adopted for their association the name and example of the Roman citizen soldier, who laid down in peace arms assumed only for the public defence. It was Washington personified under the image of the Roman Cincinnatus. Appropriate emblems were devised for badges and ornaments, including the eagle, and uniting the blue and white in compliment to the combined arms by which the successful result had been effected. The honors of membership were extended to a number of French officers, to whom they became an object of ambition. Funds were formed by the contribution of one month's pay from each officer for the relief of the unfortunate in their ranks among the state branches into which the institution was divided; and to this benevolent feature it perhaps owes its continued existence.—Its honorary membership was not intended to be confined exclusively to military merit; and the most interesting point about its organization relates to the succession of its regular membership. This was construed at first to be a right of privilege inheritable and directly transmissible, upon principles analogous to those of legal descent. In the bond of association it was limited to the eldest male poster-

ity, together with their kindred, who should be worthy of becoming supporters. The extending phrase, admitting collaterals, appears to be an interlineation upon the original draft of Knox, and therefore the qualifying clause which follows was intended to apply not less to the first than to the second description. An unvarying law of primogeniture was met by the objection of Hamilton, one of the foremost and most earnest advocates of the institution, that it referred to mere birth what properly belonged to merit, a principle which was pronounced in a report presented by him in 1787 to be inconsistent with the genius of the society. Yet the privilege which was taken to be attached to primogeniture excited public jealousy, and was seized upon as a salient anti-republican feature and the germ of a hereditary aristocracy. So strong was the popular feeling on this score, that at the first ensuing general meeting, held at Philadelphia in May, 1784, the subject was specially called up for discussion, and, on account of the difference of opinion manifested, it was finally thought best to omit entirely any provision for the continuance of the institution beyond the period of its founders. Washington would have been willing even to sacrifice the existence of the society, had it not been for its relation to those foreign officers enrolled in it, who had already held a meeting abroad, and for the charitable provision which it contemplated. Though sympathizing deeply in the intentions and proceedings of its founders, he had fully determined that a concession, by which it should be relieved from any imputation of being a species of hereditary order, should be the condition of his accepting the office of president-general, to which he had been invited. From this purpose he was induced to depart only under a persuasion that some "middle way" might be adopted, by which the conflicting ideas should be harmoniously adjusted, the grave apprehensions be allayed which affected the minds of Adams, Jefferson, and Jay, not to mention Mirabeau and others, and the society be maintained without impairing its essential principles or failing of its beneficial results. A private journal of the proceedings of the convention of 1784, kept by Gov. Winthrop Sargent, who was a member, and brought to light in 1858 by his grandson, Mr. Winthrop Sargent, as a contribution to the "Memoirs of the Pennsylvania Historical Society," shows the strong feeling which existed both for and against the principle of descent which had been recognized by the society. Although the formal results of this convention were rather negative than positive, and its proposals were not fully acceded to, and therefore not necessarily authoritative over the state societies, yet practically a manifestation was made which allayed hostility by bringing into relief the line of merit which existed in the original draft side by side with that of birth. It was after this public pledge was given, and upon the simultaneous assembling at Philadelphia in 1787 of the general society of the Cincinnati and the convention to
form the constitution of the Unit
of which Washington attended,
difficulty in his mind appears
overcome, and the warfare agai
tion to have consequently died a
it mingled with the strife agai
of the federal constitution. W
accepted the office of preside
continued to hold by successive
long as he lived. At their
election the members of the
the satisfaction of saluting hi
of the United States, and
gave him their united and cor
the measures of his administra
general society, and through all
they passed unanimous resolut
and private sorrow at his dece
death, it being found that the pr
had not received a favorable re
stitution was assumed to remai
position. From this time grea
paid to the former leading idea
succession, and some certain lin
tween the members and the or
became an established principle
tion. Yet the change in its
wrought by the proceedings of
ignored, and the claim for mem
be determined, not by mere con
by a just elective preference amo
of kin, more especially in the
born. No absolute indisputable
moral title to preference, was v
birth; and in the absence of any p
membership has always been re
tion, which has become so settl
to be the normal organic law of
Nor is there any known instanc
to membership in any other way.
also acquires a validity from
those state societies which have
ters, and thereby possess the
choosing their own associates
belonging to every such corporat
led by any speciality beside its ow
acter. The view has obtained
itary element contained in th
compact of association, arising fr
character of a charity, is inher
cable, subject only as a working
due practical limitation—a fou
could not be changed without su
institution. It was a clause in the
association, that members in the
state should become such in th
state to which they might remov
theory of the society has been to
ilege to a single individual of t
the representative. This rule, w
ed in most of the societies, is a r
ginal idea of the institution, a
by a certain practical consisten
most uniformly in that of New Y
perhaps, in that of New Jersey:
the most part, observed in th

The same general prin-
ed also in some of the
In that of South Car-
s, a broader scale of ad-
ed, embracing all male
the same degree of blood
exercising greater latitude
by any other branch. In
the spirit of the institu-
hed, different degrees of
line of descent may be
In all the societies, from
, a brother or a nephew of an
has been admitted upon the like
direct male descendants through fe-
lines have, upon failure of the ori-
been made admissible in prefer-
re remote. These variations,
up in the different branches,
has not found it practicable
at its convention at Trenton,
, at which all the branches were
after a long adjournment of experi-
ments made to produce uniformity,
unanimously to leave the ques-
several state societies. A more
al basis of admissions has been
, upon equitable principles, coming
scope of the original design.—The
period of the Cincinnati society was
ngton was at its head, sur-
y of his old companions in
ded in the same seat by Hamil-
Pinckneys, lasting with scarcely
until the visit of Lafayette,
only surviving major-general. The
ution of its veteran ranks from that
from various causes, partly natural,
fact that some of its beneficent
already accomplished, and from the
n obtaining muniments and charters
ctive states, owing to the remains
hostility against it. The societies
a and Massachusetts were able to
lves on special state acts of incor-
the latter obtained after much
n. The Connecticut society was dis-
1804. after a patriotic valedictory by
s, on the eve of the tragic death
The Delaware society dissolved
the same time, the more attached of
carrying their share of its funds
Pennsylvania. Those of New Hamp-
Island, and Virginia prolonged
e to nearly the same period, the
depositing their records in the state
ieties, the latter devoting its funds
wment of Washington college. The
lost number was that of Georgia,
eathed what it had left to the general
ty. The original constellation was
nearly one-half. The last of the ori-
ers of the society was Robert Burnet
rk, who died in 1854. The society
havi 6 active state branches,
ngs on the 4th of July. The general society meets triennially, and its later conventions have been successively at New York, Baltimore, Charleston, Trenton, and in 1857 in Boston. It is an interesting fact that inquiries, with a view to the resuscitation of this institution in France, were making among descendants of the original French members just before the *coup d'état* of Louis Napoleon, which, however, put an end to the interest in it. Gustavus III., king of Sweden, forbade officers in the French army, who were his subjects, and had been in America, to wear the badge of the Cincinnati, on the ground that the institution had a republican tendency not suited to his government. Among the earlier elect honorary members of the Cincinnati of Pennsylvania are Benjamin Franklin, Sharp Delany, and Robert Morris; among those in New Jersey are Elias Boudinot, William Livingston, and Frederic Frelinghuysen; among those in New York are Chancellor Livingston, Gouverneur Morris, Rufus King, Stephen Van Rensselaer, the naval commanders Bainbridge, Biddle, Stewart, Hull, and Perry, and Generals Jackson, Scott, Brown, Cadwallader, Taylor, Worth, and Wool. In Massachusetts the only honorary admissions have been John C. Warren, William H. Prescott, and Daniel Webster.—The great causes and events leading to the establishment of the Cincinnati are well stated in the work of Mr. G. T. Curtis on the "Constitution of the United States." Portions of the correspondence of Hamilton with Washington, in the 2d volume of his "Life," &c. (1858), by his son, throw light upon the subject; and also passages in Marshall's "Life of Washington," and an appendix to the 9th vol. of Sparks's edition of Washington's writings. The best later accounts are in the "North American Review" for Oct. 1858, and in the "Memoirs of the Pennsylvania Historical Society," vol. vi. The latter contain interesting notices of the French members of the society, and of their various fortunes. Hamilton Fish of New York, the present president-general of the Cincinnati, is stated to be preparing a history of the society.

CINCINNATUS, Lucius Quintius, a hero of the old Roman republic. He was elected consul for the first time, to succeed Publius Valerius Poplicola, 460 B. C. His son Cæso Quintius had in the previous year been banished by the tribunes and the commons, for turbulence and rioting on the aristocratic side, in opposition to the Terentilian law for the creation of decemvirs, and had been subsequently slain in a desperate effort to return by force of arms, seizing and occupying the capitol in conjunction with one Appius Herdonius, a Sabine adventurer, and a band of fugitive slaves and outlaws. In consequence of this, although he had, as became a consul of Rome, aided in reconquering the capitol, and in putting down the sedition, to do which cost him the life of his own son, Quintius, who was surnamed Cincinnatus from the care which he bestowed on his crisp curly hair, conceived a bitter hatred to the commons, who were in constant tumult against the exactions and oppressions of the aristocrats; and, refusing to have any concern with them or with the city, withdrew to his estate, a corn land of 4 *jugera*, beyond the Tiber, on which he dwelt with his wife Racilia, cultivating his farm with his own hands, and living frugally, but sufficiently, without desiring to be rich, by the produce of his field and garden. The story of his first dictatorship, as told by Livy, has been in the main rejected by Niebuhr and other modern historians, as mythical and in some respects impossible. It is as follows: In 458 B. C., a war having broken out with the Æqui, who under their chief Gracchus Clœlius had taken advantage of the dissensions of the Romans to waste their territories about Lavici and Tusculum, one of the consuls, Lucius Minucius, marched against the enemy, into the Alban hills about Mount Algidus, and was incautiously led into a defile, where he was blockaded with his legions, without food for his men or forage for his horses, and was unable to come to action with the enemy, who sat on the hilltops all around him, having fortified the only egress by a rampart and ditches. But, before the defile was completely closed, 5 Roman horsemen broke out and conveyed the tidings to the city; and there was great grief and consternation, and none knew what to propose, or how to save the army. But Quintus Fabius, who was warden of the city, sent to recall Caius Nautius Rutilus, the other consul, who was with his legions in the Sabine country, and when they two had taken counsel they bethought themselves of Lucius Quintius Cincinnatus; and the senate determined that he alone could save the country at that crisis, and instructed the consul to nominate him to be dictator, with 24 lictors and absolute power of life and death, and to be the master of the people. Thereupon messengers, sent from the senate, found him at work in his field, clad in his tunic only, and he called his wife to bring him his toga, in order that he might receive the message of the senate in the appropriate garb of a Roman citizen. Then having heard what they had to tell him, he accepted the dignity, accompanied them into the city, and was invested with the title of dictator, which gave to him the same power which had been held by the kings of old. Then he appointed Lucius Tarquitius, a man of an old patrician house, but poor like himself, to be his master of the horse; and going into the forum, commanded that all the shops should be closed, all suits at law suspended, and all private business deferred, until the consul and his army should be rescued; and to that end he ordered a levy *en masse* of every man who was of age to take arms, and that they should all be assembled at sunset in the field of Mars, each man carrying 12 palisading stakes, beside his arms and cooked provisions for 5 days. At sunset they were all present, as it had been directed; and, marching at once, they reached Mount Algidus before midnight, and piling their baggage, but retaining their stakes and intrenching stood to their arms, while the dictator noitred the position of the enemy. This the Romans spread themselves out in a circle, until they had encompassed the who were themselves formed in an interv with the Roman consular army beleague the centre. So soon as they had entirel rounded the Æqui, without being disco each man, at a given signal, began to pit palisades and dig a ditch where he stood as they fell to their work, the whole a up a simultaneous shout, which struck into the enemy, and being heard acr lines, in the consul's camp, animated sieged Romans with such courage, at t of rescue near at hand, that they sallie and fighting the enemy hand to hand morning, hindered him from disturbing t levies under Cincinnatus until the work completed, and the Æquian host was, in it absolutely circumvallated. On this, seei hopelessness of their position, the Æqui lated, on condition of being allowed to home harmless; but their chiefs were up bound, and the common men lai their arms and gave up their o ments, and passing under the yoke tunics, returned disgraced to their own try. But Cincinnatus allowed no share plunder to Minucius or his army, nor permit that consul to retain his rank. h graded him to the office of his own li and so, marching back to Rome, enter the evening after he had left it, having the whole work within 24 hours. Many after this feat, in 439, at the age of 80, he second time appointed dictator to oppose plebeian knight, Spurius Mælius, who wa pected of aiming at the kingly power, was slain; his death being pronounce able by Cincinnatus, who retired from the torship after 21 days, to return to his

CINEAS, a Thessalian minister an of Pyrrhus, king of Epirus, possessed g torical powers, which made Pyrrhus his eloquence had won him more citie own arms. The most remarkable ep his life was his mission to Rome after tle of Heraclea (280 B. C.), to negotiate of peace for Pyrrhus. His wonderful enabled him to address all the Roman l by name, but his persuasive power, gr mired as it was, was defeated by the eloq of old Appius Claudius the Blind. turn he told Pyrrhus that the city of like a temple, the Roman senate an of kings, and that to fight with the Roman ple was to fight with the hydra. In 278 h employed to negotiate peace in Sicily, whe appears to have died shortly afterward.

CINGALESE LANGUAGE, correctly *halese*, so named from Sinhabahu (lion a king of Lādha on the Ganges, whose so jaya (victory) founded the kingdom of 6th cent. B. C.; this being also called

(lion isle), in Chinese *Sse-tse kuŏ* (lion
om). It is spoken in the interior and on the
oast of Ceylon, while Tamulic and Malay
oken on the other coasts. It is a modifica-
f the aboriginal Elu by the Sanscrit, with
it tinge of Malay, and has many dialects.
anguage of religion and of learning is
ali. Deveni Paetissa, the 9th king, be-
a Buddhist, introduced writing (be-
of 4th cent. B. C.), and Pali books were
in under Manamraja, the 5th king of
vva-vansa (Sun dynasty, 5th cent. A. D.),
The Cingalese has degenerated so
there is now a material difference
n the vernacular and the written lan-
The latter is copious, has a regular
r. and is capable of elegant style, al-
pundits disagree in orthography.
system is the Devanāgarī, but the
the letters are serpentine and slender,
he Pali. The 50 letters (8 vowels,
, 34 consonants) represent 30
vowels, 23 consonants); because some
r in Sanscrit words, and some cannot
guished by the ear. Our transcription
as to vowels, English as to *ch*, *sh*, *j*,
er consonants, excepting *g*, which is
, and as to the diphonics *chh*, *jh*, *th*,
h.—There are 3 genders: masculine
mostly in *a*, plural *o*, *an*, *aru*; feminine
varu; neuter in *a*, *u*, plural adding
ing the final syllable (thus: *nuvara-*
kadu, swords, from *kaduva*). The
sculine and feminine case endings
gē, *nē*; dative, *ta*, *da*; accusa-
ablative, *gen*, *nen*; there is no *gē*, *gen*
but only the other terminations.
ngs of both numbers are: *ē*, *ata*, *ava*,
of the above-named 4 cases respectively.
: *manuspayā*, *homo*; *gūnī*, *mulier*;
caput; genitive, *manuspayāgē*, *hominis*;
ulieris; *oluraē*, *capitis*; dative, *ma-*
a, *homini*, &c.; accusative, *gūnīva*,
&c.; ablative, *oluren*, *capite*, &c., as
iled; plural, *manuspayo*, *homines*;
lieres; *olu*, *capita*; *manuspayinnē*,
&c., respectively, as pointed out.—
ives are indeclinable, and precede the
ntives; thus: *sonda pirimiyā*, *bonus vir*.
rative particles are: *bohoma*, much; *va-*
ore; *ati*, most; thus: *vadā naraka*, worse;
, wisest; *sarīrayata vadā sonda prā-*
ody-than more-good soul), *corpore melior*
(*est*). Numerals: *ekay*, 1; *dekay*, 2;
, 3; *hataray*, 4; *pahay*, 5; *hayay*, 6; *ha-*
; *atay*, 8; *navayay*, 9; *dahayay*, 10; *vis-*
0; *tihay*, 30, &c.; *siyayay*, 100; *dahay*,
Ordinals: *palamu-veni*, 1st; *de-veni*,
-veni, &c., suffixing *veni* to the cardi-
with some alterations.—Pronouns per-
mama, *ego*; *mangē*, *mei*; *mata*, *mihi*;
me; *mangen*, *a me*; *api*, *nos*; *apagē*,
; *apata*, *nobis*; *apava*, *nos*; *apagen*,
There are 14 terms in addressing the 2d
regulated by the rank both of the
nd of the person addressed, according to strictest etiquette; for instance, a person of the lowest caste is *to*, masc., *ti*, fem. (thou, you); a son or pupil is *umba*; an equal is *tamunnuhu*, and somewhat respectfully, *tamunsē*; a superior is *tamunvahansē*; the highest person is addressed by *etanavahansē*; with other varieties, all equivalent to thou and you, but modified by case and number. The 3d person is spoken of or pointed out with fewer variations.—The verbs are very peculiar; those of the Elu being radical and simple, but those derived from Sanscrit being nouns verbified by certain auxiliaries. Propositions and postpositions, conjunctions and adverbs, are numerous.—Nouns and infinitives of verbs are often joined, both receiving a final *t*, thus: *gandat dendat*, in order to take and to give; or *ut* after consonants, thus: *vachanavalut kriyāvalut*, to become and to act.—The Cingalese literature, being chiefly Buddhistic, has suffered very much from the intolerance of the Brahmins, who speak Tamulic and are Malabars, who invaded Ceylon (A. D. 1), whose 6 kings reigned from 935 to 1021, and who, though expelled, again (1170) suppressed Buddhism. King Parakramabahu restored the sacred books (1195), partly by the memory of priests, partly by new composition. Beside their own books, they also translated some scientific Sanscrit Brahminic works, which they call *Sanna*. There are also versions into Elu from the Pali, for instance the *Elu Atuvāvas*, or comments on Buddha's life and doctrines. The *Bana* are sermons of Buddha. There are very many books on botanical medicine, many on astronomy, some of a rhetorical and poetical character, a few historical and lexicological. The *Rājāvali* (*rājā*, king, and *āvali*, line), a history of the kings of Ceylon, translated by Al. Johnston, Joinville, Davis, and Mahony, and the *Amaracōsha* (*amara*, immortal, and *kōsha*, issue, bud, &c.), or in Cingalese *Amarasinha* (the author's name), a dictionary, with a copious Cingalese commentary, are Sanscrit works. See also *Singaalsche Taal konst* (Grammar), by J. Rüell (Amsterdam, 1708); a short grammar, by Dav. Wilkins (in the preface to Chamberlayne), who obtained the pronunciation from Pet. Croenenburg; "Dictionary of English-Cingalese and Cingalese-English," by the Rev. B. Clough, 2 vols. (Colombo, 1821 and '30); *Mahavansa*, an epos in Pali, translated by Turnour; *Essai sur le Pali, la langue sacrée de la presqu'île du Gange*, by E. Burnouf and Chr. Lassen (Paris, 1826).

CINNA, Lucius Cornelius, the leader of the Marian party during the absence of Sylla in Asia, 87–84 B. C. He was prætorian legate in the Marsic war. In 88 B. C., Sylla, when about to depart against Mithridates, allowed Cinna to be elected consul with Cn. Octavius, on condition that he would not attempt to alter the constitution. Hardly, however, had Sylla crossed the Adriatic when Cinna began to take measures for breaking down the power of the aristocratic party. He dissolved the supplementary tribes in which the new citizens had been enrolled, and distributed them among the original 35, where the main strength of his antagonists lay. The aristocrats, however, carried the day at the ensuing election, and Cinna had to resort to flight. The senate deposed him from the consulship, and he levied troops all over Italy. In the mean time Marius returned from Africa, and all the leaders of his party having coöperated with him in investing and blockading Rome, the city was captured, and horrible vengeance taken on its inhabitants. After this Marius and Cinna proclaimed themselves consuls; but the former dying suddenly, Cinna took for his colleague L. Valerius Flaccus, and on the murder of Flaccus, Cneius Papirius Carbo. Rumors having reached Rome that Sylla was advancing with a mighty force, the consuls hastened to Brundisium to superintend the transportation of troops to Illyricum; while there, a mutiny broke out among the legionaries, and Cinna, in endeavoring to quell it, fell a victim to their fury.

CINNABAR. According to Pliny, this is an Indian name given to a mixture of the blood of the dragon and elephant, and to other substances which produce a similar color. It was afterward applied to the common ore of mercury, the sulphuret, on account of its blood-red color. The ancient Romans were probably acquainted with this ore of mercury, for the mines of Almaden, near Cordova, in Spain, which still produce it, are known to have been worked nearly 3,000 years ago; and both Pliny and Vitruvius refer to the ore of mercury in amalgamating gold. The name is also given to an artificial preparation, which is identical in composition with the ore. Cinnabar consists of one atom of mercury, the chemical equivalent of which is 100, and one atom of sulphur, 16; or, per cent., 86.2 of mercury, and 13.8 of sulphur. It forms beds and veins in the upper secondary and older stratified rocks, and is also met with in granite and porphyry. The strata near the veins often contain the ore disseminated through them. It crystallizes in rhombohedral forms, possesses an adamantine lustre, and a brilliant red color, passing from cochineal to ruby red. Its hardness is from 2 to 2.5; its specific gravity is 8.998. It sublimes at a red heat, and without decomposition if protected from the air; and when mixed with iron or lime in retorts, the sulphur is retained and the mercury volatilized. When finely ground, it becomes of a very lively red, and in this condition is known as vermilion. The most important mines of native cinnabar are those of Almaden, already referred to, of New Almaden in California, of Idria in Austria, and of Huanca Velica in Peru. In Hungary, Bohemia, Bavaria, China, Japan, and Brazil, the ore is also worked.—Artificial cinnabar, from which the greater part of the vermilion used in the arts is prepared, is made by subliming an intimate mixture of 5 or 6 parts of mercury and one of sulphur. The mercury is introduced and stirred into melted sulphur. When the mixture becomes thick, combination suddenly takes place, attend-
ed with violent crackling and mo
mass, and evolution of light and
blackish red product is pounded to p
mixed with a little sulphur. A glas
filled with it, and loosely closed wi
coal stopper, is partially buried in a
and kept at a red heat for some hours
cess of sulphur passes out of the fla
cinnabar sublimes and condenses in
part, leaving the fixed impurities in t
It is then broken up and ground wit
ter as finely as possible, and finally d
finer the powder is made, the more b
the color. In Idria the process is
different, mercury being thoroughly i
with powdered sulphur by placing t
ther in casks which are made to re
a few hours a brown powder is produ
is heated and sublimed in cast-iron ve
Chinese have still another proc
cinnabar is said to incline to a
while all the European has a yel
These processes are all in the dry wa
substance is also prepared in the w
the action of the alkaline hydrosulp
the black sulphuret of mercury, whi
tained by passing sulphuretted hydroge
a solution of some mercurial salt.
artificial product is obtained by Brun
cess. Mercury, 100 parts, is triturate
parts of sulphur, till the whole is conv
Æthiops mineral (a black compound
substances). This is placed in a solutio
ing of hydrate of potash in 6 parts of
kept at a temperature varying little
C., with constant stirring at first. As
evaporates it is replaced. The redde
ally begins in about 8 hours. The
not then rise above 45°. When the c
brightest it is allowed to cool slowly.
washed and freed from the metallic
From 109 to 110 parts of cinnabar
mercury is the product. Vermilion i
ated with brick dust, oxide of iron, red
dragon's blood. The last is detected
pyreumatic odor on applying heat; t
by their remaining behind when the p
ignited.

CINNAMON, the inner bark of t
mon tree (*laurus cinnamomum*), whic
to have been known at a very earl
The spice obtained from it was use
Hebrews in their religious cere
Exodus xxx. 23). The Arabian merc
ing between the Red sea and the
posed to have carried supplies of
range of Phœnician and Grecian c
This plant is a native of Ceylon, wher
to the height of 20 or 30 feet. The
originally collected from the tree in
state, as the Cingalese gave no atte
cultivation and improvement. The
were probably first attracted to Ceyl
extensive cinnamon tracts, and forme
ments at Colombo, the present capital o
in the neighborhood of which the b

found. As they paid little atten-
to agricultural pursuits, not much
ward the cultivation of the tree
tch came into possession of the isl-
by clearing off the underbrush and
roughly draining the lands, a finer
k was produced. The cinnamon
hey are called, cover an extent of
yield ranging between 50 and
acre. For a long time the
rnment monopolized the trade in
in which period it was greatly ex-
being the sole mart for
plies sold in that city were
from 1692 to 1792 about
um. After the British came
on of Ceylon, the cinnamon trade
ls of the East India company, by
nopolized until the year 1833.
own open, but heavy duties were
exportation. Cinnamon from Java
ater, as also the cassia from China,
etition with the Ceylon spice,
ave been much reduced, though the
superior to any other variety.
on, being light and sandy, is par-
ted to the culture of the cinnamon
se are found in South America
hey are raised from the seed, and
s afford shoots fit for peeling.
vesting seasons in the course of
first and principal crop is pro-
1 June, the 2d in November.
old continue to this day to bear
he "peelers," as they are called,
to the Chalia caste, and become
very skilful. The bark, after being
about 40 inches in length from
ollected in bundles for the purpose
the epidermis being easily re-
then slowly dried, rolling up in
of a quill. It is assorted according to
into 3 varieties; the inferior kinds
ting are used in preparing the
which is obtained from them
The best stick cinnamon is al-
as paper, of a light yellowish-
and of a sweet aromatic taste.
d is produced from the late
in Ceylon, which since 1840
to private capitalists. The in-
ons produce an inferior quality,
valued comes from the forests.
is an efficient aromatic, and
prescribed alone, enters into
preparations. The oil is used in
y, pharmacy, and sometimes instead of
Cinnamon, when ground, is frequently
ed with cassia (which is often substitu-
, and with baked wheat flour, sago meal,
dia arrow-root. The adulteration is not
f detection. The Chinese cinnamon,
product of the *cinnamomum cassia*,
called cassia. But it is often designa-
of the superior article, and sold
sometimes it is found little inferior to the real cinnamon. The United States imported in the year ending June 30, 1857, 85,234 lbs. of cinnamon, valued at $18,865.

CINNAMON STONE, a variety of garnet of a cinnamon brown shade. It is found at numerous localities in the metamorphic rocks in this and other countries. That brought from Ceylon is used in jewelry. (See GARNET.)

CINQ-MARS, HENRI COIFFIER DE RUZÉ, marquis, a favorite of King Louis XIII. of France, born in 1620, beheaded at Lyons, Sept. 12, 1642. His father, the marquis of Effiat, was indebted for his fortune to Cardinal Richelieu, who also chose the son as a companion for the king. The young man ingratiated himself so much into the affections of his sovereign, that he was appointed grand master of the wardrobe and of the horse. He now aspired not only to have a share in the government, but also to the hand of the beautiful Marie de Gonzaga, princess of Mantua, who afterward became queen of Poland. The cardinal made light of his pretensions, but Cinq-Mars took offence at this contemptuous treatment and resolved to resent it. In conjunction with several discontented noblemen, he opened negotiations with Spain; but Richelieu succeeded in procuring a copy of their agreement, brought it to the knowledge of the king, and obtained an order for the arrest of his favorite. Cinq-Mars was thrown into prison in company with his youthful friend De Thou, a councillor of the parliament of Paris, and both were sentenced to death, and beheaded at Lyons. It was said that Richelieu had the boat with the two young men on board towed up the Rhone by his own barge, in order to consummate his revenge by bringing his victims himself to the scaffold.

CINQUE PORTS, the 5 English channel ports of Hastings, Romney, Hythe, Dover, and Sandwich, on the S. E. coast of England, to which were afterward added the towns of Winchelsea and Rye. These ports, lying opposite to France, received peculiar privileges in the early days of English history, on condition of providing, during war, a certain number of ships at their own expense. According to Camden, the first warden was appointed by William the Conqueror; but their charters are traced to the times of Edward the Confessor. They are governed by an officer called the lord warden of the cinque ports. Formerly each of them sent 2 members to parliament, under the title of barons of the cinque ports, but since 1831 this privilege has been restricted to Hastings, Dover, and Sandwich. The duke of Wellington was lord warden of the cinque ports, and died at the official residence, Walmer castle.

CINTRA, a town of Portugal, in the province of Estremadura, on the edge of a granitic sierra, which forms a continuation of the Estrella range, 15 m. W. N. W. of Lisbon; pop. about 4,000. It is a place of resort for the wealthy inhabitants of the capital, for English, and other foreigners, whose villas are scattered over the neighboring slopes, and stud the beautiful valley of Col-lares, W. of the town. Fruits of every description abound in the surrounding country; the climate is mild and pleasant; and the scenery, though, perhaps, surpassed in other parts of Portugal, has been extravagantly praised by Byron. The kings of Portugal have a palace here, which was formerly the residence of the Moorish monarchs. In it Alfonso V. was born and died, and Alfonso VI. was confined during the last 8 years of his life. On the summit of one of the highest peaks of the sierra is a convent built by Emanuel, and restored and beautified by the ex-regent Ferdinand, father of the present king. There is another convent built for the reformed Franciscans by De Castro, and called the "convent of cork," from the circumstance of the cells being lined with that substance. It is partly hollowed out of the rock. The residence of De Castro, and a chapel built by him after his return from India in 1542, are shown to visitors. In the vicinity of the town are quarries of beautiful marble. On Aug. 22, 1808, a convention was concluded here by the English commander Dalrymple, with Gen. Junot, after the defeat of the French at Vimieiro, by which they were not only permitted to leave Portugal, but were conveyed to France with their arms and property.

CINTRA. I. Gonçalo de, a Portuguese navigator of the 15th century, distinguished himself at Ceuta, in the great expedition of John I.; attempted to lay waste the coast of Granada, still under the dominion of the Moors, but was murdered by the negroes in 1445, with several of his fellow voyagers, on the coast of Africa, in the bay of Angra de Gonçalo de Cintra, which was called after him. II. Pedro de, explored in 1462 the coast of Guinea, advanced to Cape Mesurado, 7° N. lat., gave names to several rivers and capes, and made a 2d voyage in 1482, when he advanced as far as La Mina, where he caused a fort to be erected.

CIONE, Andrea di. See Orcagna.

CIPHER (Arab. *sifr*, empty), in arithmetic, one of the 10 characters used in computation, formed thus, 0, which standing by itself has no value, but when placed on the right hand of a whole number increases it tenfold, and when placed on the left hand of a decimal fraction diminishes it tenfold.—The term is also given to an enigmatical intertexture of letters, as the initials of a name, engraved upon carriages, furniture, plate, seals, or tombs, which it was formerly the custom of tradesmen and citizens to display, much as a coat of arms was displayed by the nobility; also to the monogram or conventional figure by which some artists have designated their names upon their works.—It is also the name of any disguised method of writing, designed to be understood only by the persons who have especially agreed upon the significance of the characters employed. The oldest example of this is the Spartan *scytale*. When the general of the army departed on any expedition, he took a round wooden staff, called a *scytale*, with
him, leaving another exactly like i
ephors. When the latter had any c
to make to him, they wound a slip
round the staff, and on this wrote
Being unrolled, only detached and
letters appeared, but when sent to
he was able to put it in position up
and read it. The art of secret writi
ern times was long regarded as a
magic. When the learned abbot
published a treatise on it about 150
tor palatine, Frederic II., caused a c
be burned, as containing diabolic
More recent writers on the subject a
Porta, Vigenère, P. Niceron, Kluber
1809), and Martens (Leipsic, 1851).
use of cipher writing since the ti o
has been in diplomatic correspon
are various methods, by figures, le
characters, but all are upon the prin
ploying an alphabet known only to
sponding parties. The art of decipl
tecting the key of an unknown cipl
an enemy or officers of police
often to have recourse, requires
knowledge of languages, and of the
cipher writing, but also patient
special aptitude. From a few rule
stance, that in English *e* is the l
most frequently occurs, and *the* the
mon word, the whole may gener
duced. The task is rendered much
cult when false characters, which a
counted, have been interspersed in
A curious explanation of the process
ling a cipher is given in E. A. Poe's
"Gold-Bug."

CIPPUS, among the ancient Rom
column, generally rectangular, but
round. It was used for various pur
ally as a sepulchral monument, and
often richly ornamented. Cippi w
times erected on highways to ser
stones, and they were also employed
on which to inscribe the decrees of

CIRCARS, Northern, an old di
presidency of Madras, British Ind
the E. coast of the peninsula, betw
40′ and 20° 17′ N., long. 79° 12′ and
bounded N. by Cuttack, S. by the
by the bay of Bengal, and W. by O
17,000 sq. m.; pop. about 2,995,50
vision formerly comprised 5 distr
Circars, viz.: Chicacole, Rajahmun
Condapilly, and Guntoor, the territo
ed in which is now distributed
British districts of Guntoor, Masuli
jahmundry, Vizagapatam, and G
range of mountains runs along th
tier, supporting a growth of valuab
other timber, and leaving between
and the coast a fertile tract of 3
average breadth, in which grain and
kind of tobacco are produced abund
gar, ginger, turmeric, and cotton
vated; but fruits and green

larger species of horned
pal quadrupeds. Ship-
d on in the Godavery river;
with dras and other ports
ve vessels; cotton
, pun jum cloths, muslins,
manufactured, and fine
exported to England. The
are almost without exception
class, are thought to be supe-
lese. Their villages are little
ns of large mud huts. Four
acquired from the emperor
wed them upon the East
gift in 1765; Guntoor,
British hands in 1788.

A, properly TCHERKESSIA or TCHER-
led by the Circassians the land of
the only part of the western
bdued, lies along the N. E.
sea, a distance of 200 m.,
ooban on the N. to the small
or Burzukia, not far from
reen lat. 43° 28′ and 45°
the Russians leaves the
d, but the country may be
, to extend from the Black
. 4 30′ E. On the N. and N. E.
the territory of the Tcher-
by the river Kooban, and on
from Mingrelia by the highest
The whole of this country,
the low lands on the Koo-
mountainous, embracing some
peaks of the Caucasus, and is
oken into deep valleys, and in-
eams. From the contiguity of
to the sea the watercourses
of small importance, the Laba,
at, and others, being in summer but
eks which stagnate on the low
luce miasma. The hydrography
the waters of Kabardah being
Terek to the Caspian sea, and
Circassia by the Kooban to the
Both rivers rise near Elbrooz. The
its way through the Dariel pass,
rivers, which, descending rapidly
untains, form fertile valleys, and
ere it leaves Circassian territory.
after traversing the land of the At-
te branches, reunites its waters,
Caucasian provinces from the
ooban Tartary. The chief places
Temrook, Kepli or Kaploo, and
population has been estimated,
fighting vassals of the 1,500 uz-
; but a Russian estimate in 1846
, in which is included the Cir-
ry, sets the area at 41,410 sq. m.,
inhabitants. The name Tcher-
signifies "cutters of roads;" a
t to cutpurses or robbers, was
Tartars; the Circassians call them-
, "the noble." They are essen-
as well as warlike people. Their wealth consists in flocks and herds, horses and arms. Money, as a circulating medium, is almost unknown. According to their eulogists, the Circassians are the handsomest, bravest, and noblest of mankind. On the other hand, their detractors paint them as no better than a semi-barbarous band of marauders. They do not even constitute one people, but are composed of 12 clans, subdivided into numerous families more or less powerful, under their hereditary heads, who in turn are feudatory to the princes or greater chiefs, also hereditary, but liable to be deposed for misconduct. Circassian pride of birth is excessive, and causes society to be divided into classes as strictly defined as in the most aristocratic countries. With all this they have a theory of republicanism, every free Circassian having a right to make his voice heard in the public assemblies. The social grades are: 1, the chiefs called khanouks, uzdens, khans, and pchis; 2, vourk, ancient nobles; 3, vourk (of) vourk, new gentry, so made by the vourk; 4, begualia, middle class; 5, tcho kotl, vassals; 6, slaves, mostly taken in war, and employed either in cultivation of the soil, or in menial service, who cannot be sold singly, and, indeed, are rarely transferred at all. No real difference of status exists between the 2d and 3d, or between the 3d and 4th of the above distinctions. Princes and nobles are owners of the soil, from whom their tenantry hold the land they cultivate. They have no large towns. The noble lives in his village, surrounded by his people, and exercising a patriarchal jurisdiction over them, regulating even their marriages and the education of their children. Having no written laws, ordinary affairs are administered by a council of the oldest and most respected of the villagers, whose award is final. All ranks associate, and are clothed, fed, and housed alike, the only difference being in their warlike equipment, wherein their rich men display great extravagance; the array of a chief consists of a coat and helmet of mail, sword, javelin, rifle, pistols, poniard, and frequently bow and arrows. The chiefs alone are entitled to the privilege of wearing red. Like most oriental nations, they shave the head, and never remove the head covering. The ordinary costume consists of a tunic descending to the knee, and secured around the waist by a leather belt. A round fur cap and cloth trousers of eastern pattern complete the costume, excepting on a journey, when a goat's-hair cloak with a hood is added. Their habitations are log-houses, put together slightly, so as to be abandoned at short notice. Around these cabins they cultivate millet, barley, and vegetables for their own food, permitting their flocks to pasture among the hills. The Circassian national dish is millet porridge; they also distil from millet a whiskey called *kumis*. Bees are reared on most farms, and mead is a favorite beverage. Great attention is paid to the breeding of horses. Oxen are employed in agriculture. Mules and asses are the beasts of burden, the horse being considered too noble an animal for labor. There is no regular taxa-

tion, the lower orders being required to supply what the nobles want. The safeguard against tyranny is that the vassal who finds the exactions of his lord too severe, can transfer his allegiance to another less rapacious. Some of the domestic customs are curious. A bridegroom makes a show of carrying off his bride by force from her father's house. After the birth of the first child, husband and wife no longer pass their time in each other's society, but visit by stealth. Their children are placed at an early age under the care of a patron, who brings them up without parental affection, educating the sons only for war, and the daughters for matrimony either at home or abroad. The Circassian husband has unlimited power over the lives of his wife and children. Polygamy is allowed by the Koran, but custom limits men to one or at most two wives. The women have fine forms and complexion, both of which are carefully preserved by exemption from labor and by attention to diet and cosmetics.—The traffic in their daughters has been the greatest reproach against the Circassians. About 1,000 girls were exported annually. The Russians stopped the trade, but by treaty in 1845 its renewal was permitted. Lady Sheil, in her work "Glimpses of Life and Manners in Persia" (London, 1856), gives the following information concerning the Circassian slave trade as she saw it in 1849:

"Before quitting the Caucasus I may as well transcribe a few particulars concerning the Circassians, which, though I fear may not be in themselves novel, yet certainly come from a novel source, namely, a Turkish slave dealer, who had given up his profession, and was my husband's instructor in Turkish several years ago at Trebizond. His name was Hafiz Effendi, and his residence in Circassia amounted to 5 years. His reason for giving up this branch of commerce was the vigilance of the Russian cruisers, which made it too hazardous to attempt to cross the sea with his living cargo. The ports he frequented were Soojook, Teghameesa, and Shiyapsookha, and he frequently penetrated 15 or 20 hours' distance into the interior. . . . . The mode in which the trade with Turkey is carried on is this: Trebizond is the principal port from which the merchants proceed, though they also embark from Samsoon, Sinope, Constantinople, and occasionally from Egypt. The trade is generally conducted in partnership; one person supplies the capital, and the profits are equally divided between him and the person who undertakes the labor of the voyage to Circassia. The capital on an average is about £250 or £300. The articles taken to Circassia mostly consist of silk and cotton cloths, calicoes, chintzes, cheap shawls, a small quantity of gunpowder, and a great deal of salt; also some Turkish colored leather for slippers and bridles. When the boat arrives at a landing place, it is drawn high up on the shore to conceal it from the Russians. The merchants then disembark, and if, from having made previous voyages, they are already provided with a *konak pate* (a host), they go at once to their abode; but if not, they inquire for the best private house, to which they proceed immediately, and are always welcome. . . . . Those persons who have slaves for the market do not bring them to the merchant's residence. When the latter has seen the slaves, they retire to another house, leaving the transaction to be completed by no less a person than an *elchee* (an ambassador), or by a *dellal* (a broker). When a Circassian says he has got slaves to sell, the Turk inquires if they are young, and in case of an affirmative answer, proceeds to ask how many spans they are. This refers to height. A girl is considered beyond spanning when she reaches 6 spans; she is then technically said to be *garishulen chigdee*, that is, she has passed spanning, and is understood to be 12 years old. Slaves are valued by the number of pieces of silk, chintz, &c., given in exchange for them. Ugly female slaves are purchased for Constantinople to fill menial or domestic duties. Old women are sometimes sold in Circassia. They are purchased to act as nurses in Constantinople. An old woman may be worth 1,000 or 2,000 *ghooroosh* (£17 to £25) in that city. If among the slaves that have been bought
there are any full-grown men, they are chained
they should run away, but women are never
merchants, after the purchase, supply them
clothes, the goodness and quality of which de
value of the slave. The food given to them is
that of the merchants themselves, and there is
the quantity. A great many of the female sla
to leave the country; and some young women
who are poor and unprotected, especially orpha
treat their relatives to sell them. Their hope
may be purchased in Constantinople by an
Turk, at the head of whose establishment t
placed. . . . . Sometimes a free man is sold by
Occasionally there is a collusive sale. A man
friend to sell him; he then takes to flight, a
of the purchase is divided between them.
says he does not well know how the sup
maintained. The country is populous, crimin
slaves are brought from distant places; as befo
orphans are frequently offered for sale, and som
themselves desirous of change, and willing
These, he supposes, are the principal sources
the supply is kept up. A man cannot sell his a
ter against their own consent; but it is by n
common for a man to bring his daughter int
by her own desire. The unmarried girls do n
ever, excepting network, but the married w
the drudgery. . . . . Prices of course vary at Co
according to the vigilance of Russian cruisers
corruptibility of Russian agents at Trebizond,
Sinope. The following are the average prices
Males of 80 years of age, £10; of 20, £10 to
to £70; of 10, £20 to £50; of 5, £10 to £30.
years of age, £10 to £30; of 40, £30 to £40;
£70; from 20 to 25, £50 to £100; from 14 to 18,
from 8 to 12, £30 to £50; of 5, £20 to £40."

The traffic was again suppressed in 1
firman of Abdul Medjid, which proh
sale of white persons as slaves. Not
ing the prohibition, however, there w
an absolute glut in the Circassian
at Constantinople, and a "good
cassian girl, formerly thought very
£100, might then have been had for
religion of Circassia is a mixture of
anism, Christianity, and paganism.
they follow the precepts of the Koran
superstitious reverence to the sign of
while the bulk of the people believe
spirit called Merem, and an evil, Ts
god of thunder, also Tleps, the god o
Seosserer, of water and winds. The C
not a written language, consequently
no literature, excepting a heroic bal
chronicling their feats of arms.—Chr
said by some authorities to have
duced in the 5th century, while other
its introduction to one of the prince
gia, to whom the country was subj
12th to the 15th century. Recover
dependence, it was again subdued b
tar khans of the Crimea. From thi
the Circassians released themselve
century, by the aid of Ivan I. of
had married a Circassian prince
Great and Catharine II. pursued
extending the Russian sway over the
Georgia, harassed by repeated wars
sia, having claimed Russian prote
Muscovite sovereigns became de
their rule beyond the river Kooban, w
ed the S. boundary of their empire.
cassians meanwhile, under the lea
the sheik Mansoor, had become
dans, and as such acknowledged
head of their faith, but do not

in any manner to Tur-
lly in making forays
ien the Russians ex-
nople from the Turks
ceded Circassia to Russia, but
d to recognize the cession.
Russian claim of sover-
of the war yet continuing.
ation arrived in Constanti-
pr ted to the Ottoman
rom the Circassian
inst the invasion of the
'and asking "to be placed
the majestic shadow of the im-
of the sultan." (See CAUCASUS.)

Greek mythology, a sorceress,
lios and Perseis, and married to a
chis, whom she murdered. Ex-
his jects, she was transported by
island called Æsea, off the coast
was sojourning when Ulys-
While the hero continued
sent some of his followers to pay
to the sovereign of Æsea, and to
its for himself and his crew.
with apparent hospitality,
wine to be set before them.
drank freely save Eumolpus, and
presently metamorphosed into
returned to the ship, and
s what had befallen his com-
who had been rendered proof
ment by an herb which he had
Mercury, hastened to the palace
in hand, and compelled the sor-
e his followers to their former
in love with Ulysses, who lived
year with her, and became the father
y her.

an ancient city of Latium, situated
foot of Mount Circeius, near the sea.
ed by the Romans in the reign of
Proud, who deemed its situation
or commerce, and also wished to
vark against the Volscians. It is
ong the conquests of Coriolanus,
fell into the hands of the Vol-
was reconquered by the Romans.
quently revolted from Rome, joined
those of the Volscians, succeeded
hing its independence, appeared as
cities of the Latin league at the out-
he great Latin war in 340 B. C., and
one of the two prætors who com-
he whole nation. It appears again
30 Latin colonies in the 2d Punic
rom this time seems to have declined,
re become gradually insignificant. It
ly, under the later republic and
favorite place of retirement for
s, having a peculiar attraction
and excellence of its oysters.
s selected as a place of exile,
Lepidus was banished hither.
still to be seen on the Monte della
about 2 m. from the sea. The remains of its walls, constructed of polygonal blocks, show a very massive style of architecture.

CIRCENSIAN GAMES, the various combats and contests exhibited in the Roman circus, said to have been first instituted by Romulus in imitation of the Olympic games of Greece. A part of them were abolished by Constantine, others by the Goths; but the chariot races continued at Constantinople till the siege of that city by the Venetians in 1204.

CIRCLE, a plane figure bounded by a line which, being at every part equally distant from a given point (called the centre), completely encloses it. The bounding line is called the circumference, and in popular language the word circle is used for circumference. A chord passing through the centre of the circle is called its diameter. The ratio of the diameter to the circumference was shown by Archimedes to be about as 7 to 22, and by Metius as 113 to 355, which is as accurate as is needed for practical use. The exact ratio cannot be expressed in numbers, although many algebraic expressions can be obtained for it, of which we will give but one. If the number 4 be divided by 1, 5, 9, 13, and every 4th number in succession, and afterward by 3, 7, 11, and every 4th number in succession, the difference between the sum of the 1st set of quotients and that of the 2d set will be equal to this ratio; or approximately in decimals, 3.14159265.

CIRCLEVILLE, the capital of Pickaway co., Ohio, is a thriving post village on the left bank of the Scioto river, and on the Ohio canal, which here crosses the river by a handsome aqueduct; pop. in 1858, about 4,500. It occupies the site of an ancient fortification of circular form, from which its name is derived. It contains a large union school house, erected at a cost of $25,000. There are also numerous mills and factories, and the Zanesville and Cincinnati railroad passes through the village. The surrounding country is rich and highly cultivated.

CIRCUITS (Lat. *circuitus*, from *circum ire*, to go around), civil divisions of the state, created for convenience in the administration of justice, courts being held in each at stated periods by judges who go around for the purpose. England and Wales are divided into 8 circuits, into which the judges and barristers go twice a year. There are 9 circuits, held by the federal judges, in the United States, and in each state a similar division obtains. The state circuit courts usually confine themselves to the trial of issues of fact, like the English courts of assize and *nisi prius;* and in some states the word has lost its original meaning, and signifies a stationary court which tries questions of fact exclusively.

CIRCULAR MEASURE, a measure of angles produced by dividing the circumference of a circle, with its centre at the vertex of the angle, into 360 equal parts called degrees. Each degree is also divided into 60 minutes, and each minute into 60 seconds. Circular minutes and seconds are marked by accents

(′ and ″), while measures of time of the same name are marked *m.* and *s.*

CIRCULAR MOTION, an incorrect name for the motion of a body under central forces. (See CENTRAL FORCES.)

CIRCULATING DECIMAL, a decimal fraction in which one or more figures are continually repeated in the same order, as .572572572-572, &c.

CIRCULATING MEDIUM. See MONEY.

CIRCULATION. Under this title we shall examine only the circulation of blood in the animal economy, omitting all that relates to the circulation of lymph and chyle, and to the circulation of the nutritive fluids in plants. Before stating by what decisive experiments and reasonings the eminent William Harvey (1628) proved the circulation of the blood, we must remind the reader of some points in the anatomy of man and of the higher animals, which are essential to the understanding of our subject. The heart, which is at least one of the principal organs that circulate the blood, is a complicated muscular apparatus, composed of walls separating 4 cavities, 2 on the left and 2 on the right of the organ. Although there is only a muscular wall between these 2 sets of cavities, although they belong to one single organ or apparatus, the 2 sides of the heart, in which are these 2 sets of cavities, are sometimes called, for the sake of brevity, the right heart and the left heart. Of the 4 cavities of the heart and of their walls, 2, the upper ones, are called the auricles, while the 2 lower ones are called the ventricles; so that there is a left auricle and a left ventricle, constituting the left heart, and a right auricle and a right ventricle, constituting the right heart. Now, the circulation of the blood takes place in the following way: From all the parts of the body, black blood, called also venous blood because it comes by the veins, reaches the right auricle, which propels it into the right ventricle, from which it is sent to the organs of respiration, *i. e.*, the lungs. The blood-vessel that brings the blood from the right ventricle into the lungs is the pulmonary artery. The lungs send back this blood to the heart through blood-vessels which, on account of their structural resemblance to veins, although they do not carry black or venous blood, are called pulmonary veins. In the lungs the blood by the influence of respiration becomes red, and, in consequence, the heart receives red blood from the pulmonary veins. The left auricle is the place of reception for this blood, which is thence carried into the left ventricle. By a large blood-vessel, called the aorta, the blood expelled from the left ventricle goes to all the parts of the body. So that, as may be now easily understood, there is apparently a double circulation, one through the whole body, and one through the lungs and the heart. The blood from all parts of the body comes to the heart through the veins; it passes from the trunks of these vessels, the *vena cava*, into the right auricle,
thence into the right ventricle, which
to the lungs through the pulmonary
thence it returns to the heart by the pulm
veins, enters the left auricle, which
into the left ventricle, from which it go
whole body, through the aorta and its
cations, the various arteries; finally, fro
arteries it passes into the veins through the
minute blood-vessels called capillaries. In w
ing the names of the parts through which
blood circulates, we may begin with either
these parts form a circuit; thus:

10. General capillaries.

	1. Veins.	9. Aorta and arterie
Right heart.	2. Right auricle.	8. Left ventricle.
	3. Right ventricle.	7. Left auricle.
	4. Pulmonary artery.	6. Pulmonary vein

5. Capillaries of the lungs.

If, instead of beginning with number 1, we b
with number 7, the blood then passes fr
8, to 9, to 10, to 1, to 2, to 3, to 4, to
and thence reaches again number 7. The
cipal facts discovered or clearly proved for
first time by Harvey are: 1, that the
ments of the heart are similar to those
muscles of the limbs, &c., as r
which produce them; 2, that
come full at the time the ventricles of the
expel the blood they contain; 3, that the
monary artery receives blood at the s
the aorta and other arteries receive
therefore, that the 2 ventricles contrac
expel the blood at the same time; 4, t
2 auricles contract simultaneously, and
their contraction precedes that of the 2 v
tricles; 5, that after a ligature has been
on an artery, this vessel becomes quite d
with blood between the ligature and the
and empty in the other parts, sho
the blood comes from the heart into
ries; 6, that after the application of a
on a vein the blood disappears above the
ture, *i. e.*, in the direction toward the
while it accumulates in the vein below
ture, *i. e.*, in the part which seems to
rated from the heart; 7, that the valves
veins prevent the blood from going in a
direction. From these facts and the
conclusions that may be drawn from
also from many other facts and
Harvey deduced the theory of the circ
of the blood, which we have stated, and
is now universally admitted. Harvey, i
this complete demonstration of the circ
of the blood, achieved the most import
covery yet made in physiology.—We p
to the examination of the most in
questions concerning the circulation
blood, omitting all those relating to the
quency, strength, and causes of the mo
of the heart, for which see HEART and
The causes of the circulation of the
are at present the subject of opposite
ions; on the one hand many physiologists
tain that the contractions of the heart
only cause of this phenomenon, while
look upon the influence of the heart as

t principal share in the pro-
ory movement is an at-
f the blood in and from
r organs. This last view is
an of great ingenuity and
natural philosopher,
r, pro or in the university of
he views of this distinguished
rve more attention than has been
n them, and we will therefore in-
e the principal reasons adduced by
to substantiate his theory. He
that a circulation takes place in
out a heart, and that in fishes there
art; he adds that in capillaries the
blood, seen under the microscope,
jetting movements, but a steadiness
cessation or even a retrogradation,
eems that there is no force acting
vis à tergo. Beside, the capillary
may continue some time after the
en cut; and it is known that usually
are found empty after death, which
be impossible if the blood were
by the heart, and is of easy expla-
Draper's view be true, viz., that
ttract the blood. He insists also
roving that local changes in the
ed of blood occur without a
ovements of the heart. Finally,
at when the lungs do not attract
s the case in asphyxia, the heart
it through these organs and the
ry, and the right heart becomes
h it. The action of the heart,
raper, is limited to the filling of
vessels, and it does not extend to
ies. The chemical changes taking
various tissues attract the blood in
ies, and the moment they have re-
it the substances they have attrac-
y have no longer affinity with this
t must pass onward into the veins,
it is by new arterial blood whose
position causes it to be attracted.
objected to this theory, 1, that the
seen with the microscope in the
s an abnormal one; 2, that the small
d veins being contractile, their con-
ay affect the circulation in the capil-
hat, in consequence, the irregulari-
novement of the blood in the capil-
depend upon another cause than
d to them by Dr. Draper, and that
ularities cannot be a proof that the
more impulsion from the heart when
capillaries; 3, that the movement
d in the capillaries when the heart
proof that the heart's action has
influence on the circulation; on the
e find that the movement of the
is at once different from that it had
utting of the heart; 4, that the fact
ood after death is not found in ar-
ntrary to the view of Dr. Draper,
being favorable, as it is not more arterial when it passes through the capillaries after the last contraction of the heart; 5, that in asphyxia the difficulty of passage of the blood through the lungs seems to depend much more upon the repulsion or at least obstacle to the free passage of black blood extremely charged with carbonic acid than upon a mere absence of attraction. However, distinguished physiologists have thought that the cause to which Dr. Draper has attributed too great a power exists in reality, but that its share is much less than the learned professor has imagined. It is known that ordinarily the veins have no real pulsation as the arteries have, so that, as a rule, the impulse given by the heart to the blood does not extend in a marked degree to the veins; but there are cases on record in which the veins have been found pulsating like the arteries, and it seems certain, therefore, that the heart in some cases is able to cause its impulse on the blood to be felt in the veins. In ordinary circumstances, we find in bleeding healthy persons or patients that there is a jetting of the blood at each impulse given to it by the heart, so that it cannot be doubted that, even in the veins of the limbs, the heart contributes directly to the circulation of the blood. Experiments by Prof. Sharpey and Dr. J. C. B. Williams have shown that in the dead body a force less than that of the heart is required to propel water through the arteries, the capillaries, and the veins, showing decisively that the heart is competent to carry on the circulation of the blood.—*Movement of the blood in the arteries.* Springing from the aorta, the arteries are distributed to all parts of the body, to which they furnish arterial blood. Prof. J. Paget has proved that the sum of the areas of the branches of these blood-vessels at each subdivision hardly exceeds the area of the main trunk; and if we imagine the sum of the areas of all the small arteries in the body compared to the area of the aorta near its origin, we find but very little difference, so that the speed of the blood must be pretty nearly the same in all the parts of the arterial system. The arteries are not simply elastic tubes which dilate when they receive the blood pushed forward by the heart, and contract in virtue of their elasticity when the heart's impulse ceases; they are muscular canals with power of contraction like other muscular organs. A good illustration of the share of the contractions of the arteries in circulation is furnished by the following experiments, one first made by Prof. Cl. Bernard, and the other by Dr. Brown-Séquard: If the nerve that goes to the blood-vessels of the head be divided, these vessels (arteries and veins) are seen to dilate, and the quantity of blood passing through them is much increased; if, on the contrary, the blood-vessels are made to contract, the amount of blood passing in a given time is very much diminished; showing that, in the first case, when the arteries no longer possess a muscular contraction, though their elasticity is not modified, they become relaxed and allow a larger quantity

of blood to be propelled through them by the heart; while in the second case, the contraction of the arteries being greater than it normally is, they do not receive the same dilatation from the impulse of the heart, and allow less blood to pass. The nervous system, in cases of emotion, of fright, &c., may directly act on arteries, as when they are stimulated by galvanism, and produce a contraction of the arteries in the 4 extremities, so that there is a diminution in the quantity of blood passing through them, which diminution is one of the causes of the coldness then experienced in the hands and feet. The application of cold to any part of the body causes a contraction of the blood-vessels, which diminishes the amount of blood passing through the part, and it is for this reason that cold applications are so useful in cases of external inflammation. Warm applications paralyze the blood-vessels, and therefore produce quite opposite effects. We know little as to the speed of the blood in the arteries; however, Volkmann has tried to show that the average velocity of the current in the carotids (the large arteries of the neck) of a great number of mammals which he examined was nearly 12 inches per second. He found also that the velocity was greater in the arteries lying near than in those lying far from the heart. There is a pressure exerted by blood on the walls of the arteries and veins, which is called the lateral pressure. Poiseuille measured it, and stated that it was equal in all parts of the arterial system; but Volkmann has shown that this pressure diminishes from the origin of the arteries to the end of the veins in the heart. Volkmann has also ascertained that the lateral pressure of the blood is constantly changing according to the stroke of the heart, the movements of respiration, and the muscular movements of the various parts of the body.—*Movement of the blood in the capillaries.* The smallest arteries are continuous with still smaller blood-vessels, called capillaries, which are the channels of communication between the veins and the arteries. The blood enters the capillaries red and goes out from them almost black. It is in the capillaries that the interchange between the tissues and the blood takes place; it is there that nutrition and secretion are performed, and chiefly there also that animal heat originates. The capillary vessels are so minute that a microscope is necessary to see them. They differ from the arteries and veins by their structure, which is much less complicated, and they seem to be destitute of a muscular layer, which is an important fact showing that they cannot have real, active contractions like the other blood-vessels. We owe to M. Poiseuille some interesting researches on the circulation of blood in the capillaries. He has found that there is in them a layer of serum (the liquid part of blood), which seems to be adherent to the wall and almost without movement. If there are 2 globules of blood moving together in a capillary, the one which is nearest to the wall moves slower than the other. If the globule that is near the wall goes ent
layer of serum which does not move
without motion. If many globules
in this layer of serum in very small
they impede the circulation. Facts of
had led some physiologists to admit
blood globules are animated beings
spontaneous movements and stopping
where they please. It is useless to sto
how erroneous is this view. We hav
stated that the blood could circulate
the capillaries without any other forc
impulsion given to it by the heart. Ne
there is no doubt that a force is evolv
chemical changes that take place in
laries, by which force the arterial bl
tracted into the capillaries. A striki
this fact has, quite recently, been dis
Prof. Bernard; he has ascertained
quantity of blood that flows out by
coming from the salivary glands,
greater when the chemical changes e
occur during secretion, than during t
of inactivity of these glands. But
we readily admit that there is an influ
even a great one, which is exerted pa
at certain times by the capillaries upo
culation of blood, we do not go so far
Philip, Dr. Carpenter, and Prof. Dra
respect. We think that the follo
ment of the first of these distinguis
logists does not prove at all that a
the capillaries may stop circulation al
"The web of one of the hind l
was brought before the microscope,
Dr. Hastings observed the circulati
was vigorous (in the capillaries), the
crushed by the blow of a hammer. Th
of the web instantly lost their power
culation ceasing; an effect which c
as we have seen, from the ceasing of
of the heart. In a short time the bl
began to move, but with less forc
Brown-Séquard has repeated this e
and ascertained, in the first place, t
tremely rare that the movement of
stops entirely; in the second place, that
arteries and veins contract spasmo
by so doing prevent the blood from
that the cause of the stoppage of the
is not in the capillaries but outside of th
continuation and the changes in the
circulation which take place after the
of the movements of the heart are no
due to an influence of the capillaries;
tractions of the arteries, and in a meas
of the small veins, produce a part of
mena seen in the capillaries. The
searches of Dr. Bennet Dowler, of
leans, which have shown that after
has ceased to beat in man (in indivi
have died from yellow fever), the blo
times flows out from the veins in a
able stream, do not prove that this
of blood in the veins is due merely to a
tion exerted by the capillaries upon t

ndeed, according to the theory of
r, there should not be any attrac-
the capillaries in such cases, be-
d in the arteries is similar to that
. The facts observed by Dr. Dow-
t, depend upon the contractions of
The rapidity of circulation in the
as been determined with sufficient
Valentin, Weber, and Volkmann.
rimenter has found that the
in the capillaries of the mesen-
is nearly 2 inches per minute,
bably a lower speed than the nor-
nbrane is exposed while.
cool air, and its blood-
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nn's researches that the slowness
n of blood in the capillaries
than was imagined, and
a of these small blood-
nearly 400 times that of
which they receive blood.—
ood in the veins. The veins,
vessels through which the blood
heart, are formed by the union
nto larger canals. The veins are
and larger than the arteries, and
in them is slower. The veins
sible, it is in them that the blood
persons who have too much of
an abundant meal the veins are
of the increase in the quantity
vement of blood in the veins
by the heart, partly by the
on of calibre of the arteries
y their contraction, also by the
ttract arterial blood in the capil-
el venous blood from them, and
physical causes. 1. Influence
the circulation of the blood in
have already said that the impulse
t is sometimes apparent in veins.
proved particularly in those cases
ere is hardly any interchange in the
etween the blood and the tissues,
the blood remains red in the
vein is opened in such cases,
out from it with jets as from
d there is the same rhythm in the
f jets and interruptions between
pulse of the arteries, with this
the jets exist when the arteries
veins then dilating. The series
a then taking place are the follow-
eart contracts and sends blood into
, which dilate in consequence of
in the quantity of blood in them.
eir elasticity, their calibre becomes
and by this cause the blood is ex-
them; it cannot return into the
re are valves at the origin of the
trunk (the aorta) in the heart,
the return of blood to this organ,
re the blood passes through the
to the veins, which become dilated
jet if they are opened. In cases of
the so-called venous pulse, cases in which the veins have been seen beating like the arteries, the influence of the heart on the pulse in veins has been well observed by Martin-Solon, Graves, Ward, &c. The impulse of the heart is always felt in veins, but usually it is much diminished. With an instrument in which a column of mercury is moved by blood under the impulsion of the heart, M. Poiseuille has found that in arteries in a horse there is a rise of the mercury of 182 millimetres, while in veins the rise was only from 10 to 15 millimetres. But however small is this impulse, it exists, and in this fact we have the proof that, even in veins, the heart is partly the cause of the circulation of blood. 2. Influence of the elasticity of the arteries. This is only a secondary influence, as the arteries are dilated by the impulsion given to the blood by the heart, and the diminution of calibre by elasticity is a simple consequence of the dilatation they are subjected to. The passage of blood in veins due to the elasticity of the arteries is therefore a result of the impulse of the heart. 3. Influence of the contraction of the arteries. It is true that when the arteries contract actively they push the blood through the capillaries and the veins; but these contractions are accidental, and can hardly be taken notice of among the general causes of circulation in the veins. 4. Influence of the capillaries. The chemical changes occurring constantly during life in these blood-vessels contribute to the propulsion of the blood in the veins. This influence and the preceding constitute a series of forces placed behind the blood, if we may say so, and pushing it forward; they form the *vis à tergo.* We will now speak of another kind of force which attracts the blood, and which, being placed in front of this liquid and drawing it into the chest, is justly called *vis à fronte.* 5. Attraction of venous blood due to the dilatation of the chest. Every time the chest dilates during inspiration, the veins at a certain distance from that cavity, being under the influence of the atmospheric pressure, become empty on account of the tendency to a vacuum in the chest. It is just the same thing as takes place in a syringe the tube of which is in water: on drawing out the piston, we draw the water into the cavity of the syringe. Certainly, as Sir David Barry has very clearly proved, this suction power attracts the venous blood into the chest, and therefore helps in the circulation of blood in veins; but the question is how far this suction power may extend its action. It cannot act very far, as the veins, being very compressible, have their walls brought into contact by the action of the atmosphere as soon as the attraction begins, and therefore the influence is limited to the blood between the place where the walls of the veins are approximated and the heart. Now, this approximation takes place very near the chest, and it would take place just where the veins enter this cavity if it were not for a peculiar disposition which has been pointed out by Prof.

Bérard, and which is that most of the veins of the neck, of the shoulders, and on the chest, have adherences with fibrous tissues too resisting to allow atmospheric pressure to flatten the veins fixed to them so quickly as it can do it where there is no resistance. The consequence of this is that the venous blood may be attracted at a certain distance from the chest. By direct experiment, Poiseuille has seen that it is attracted when the efforts of inspiration are energetic, even at a distance of 4 or 5 inches from the chest, in a large dog. The attraction of air into veins, and death due to this cause, in operations on the neck or the shoulder and the axilla, are the results of the extension to these parts of the suction power of inspiration upon the venous system. There is a real flux and reflux of blood in inspiration and expiration in the neighborhood of the chest.—Although all the causes of the circulation in the veins that we have mentioned seem to be sufficient to explain it, there are some circumstances which are so much in opposition to the circulation of this blood that there would be some danger of great accumulation in some parts of the venous system, were it not that a simple anatomical arrangement prevents the retrogradation of blood in the veins. When we are standing up, and when our arms are lying by the sides of our body, the blood in the veins of our lower and upper limbs has to come to the heart against the influence of gravitation. The impulse of the heart not being continuous, the blood would probably descend in the veins at the time of absence of this impulse, if it were not for valves in the veins preventing its backward movement. These valves are so numerous and so well constructed, that, in healthy persons, but little change is seen in veins while they are subjected to the influence of gravitation. When we walk and when we move our arms, another cause prevents the accumulation of blood in veins and helps in circulating it: the contractions of muscles press upon the small veins which are in these motor organs, and the venous blood then receives an impulsion pushing it toward the heart.—*Speed of the circulation of the blood.* Experiments of great interest have been made on this subject. Hering has found that a substance introduced into a vein in the neck of a horse had passed into another and remote vein in from 10 to 25 seconds. Now, in this time the blood containing this substance has gone to the heart, has been sent thence to the lungs, and come to the left side of the heart, which sent it to some part of the body, from which it was returning again to the heart by a vein. And for such a long course, from 10 to 25 seconds have been sufficient! This shows how rapid is the circulation of blood. By means different from the preceding, Dr. Blake (an able physiologist, now in California, we think) has found that for almost ½ of a complete circuit of the blood, only the short time that we will mention is necessary: in the horse, 16 seconds; in the dog, 11 or 12; in chickens, 6½; in rabbits, 4½. The whole mass of blood in the body of a passes through the heart in a time cording to various appreciations, is be and 2¾ minutes. (See also FŒTUS, HEART, LYMPH, and PULSE.)

CIRCUMCELLIONES, a band of rather than a religious sect, who, in the Donatists, in Africa, occasioned tion of the Carthaginian bishop, Ca espoused the cause of the Numidians natists, and went about as marauders dato the Carthaginian party, and to those excesses which the Donatists rejoic but were unwilling to be responsible for. Th had a strong desire for the honor of dom, and sought it at the hands of the party, by violence upon the prevalen institutions and the civil rights of the citi Thus they threw themselves between debtor and creditor, and demanded charge of the claim by the creditor on death. Whenever they met a master slave, they manumitted the slave, an pelled the master to take his place. Co tine treated their excesses with forb but Constans, his successor, deprived natists of their churches, and attemp bribe them to peace. This kindled th cism of the Circumcelliones anew. He Fasir and Axid, they committed new dations, styling themselves Agonistici, leaders, "leaders of the sons of the Holy Their frenzy increased so furiously that committed suicide in great numbers, Donatist bishops were obliged to app civil power for aid to restrain them.

CIRCUMCISION, a practice of easter tions, consisting in cutting off the prep foreskin in males, and the internal lab males. Among the Jews it is a stric ligious rite, and is used only on males. ancient times it was not only obligatory on males born of Jewish parents, but also on proselytes, and on all the slaves of Jewis ters. The rite, according to the book of Ge originated in the command of God to A and was nationalized by Moses. It wa forth practised by the Jews, except du journey through the wilderness. Cir among the Jews is performed on the after birth. From the fact that this required by religious ordinance, the term circumcised" became a term of nati proach, and is analogous to the word "hea as used by Christian writers. The Eg according to Herodotus, practised cir It is certain, however, that at a later in Egyptian history, under Persian and influence, circumcision was confined to priests and sages, but Herodotus m limitation in his statement. On the other he states that the tonsure was confined priests. He also says that the Co (an Egyptian colony, as he believed) circumcision. The same authority the Ethiopians practised it; and to the Coptic and Abyssinian Christian churches observe the custom. The Epistle of Barnabas testifies to the fact of Egyptian circumcision, and declares also that the ceremony was observed by the Arabians and Syrians. The Abyssinian church imposes the rite on both sexes. Jerome says that in his day the majority of Egyptians, Idumeans, Ammonites, Moabites, and Ishmaelites were circumcised. The Mohammedans also practise it; and although the Koran does not enjoin it, it has extended itself wherever the Mohammedan religion has been adopted. In Arabia the rite is performed on both sexes. The Arabians have a tradition that Mohammed said that circumcision was honorable in women. Pythagoras submitted to circumcision, it is said, in order to obtain instruction from the Egyptian priests in their sacred doctrines. A portion of the Phœnician nations practised the rite, but the Philistines did not. The aboriginal Mexicans were found to observe this custom. The Friendly Islanders, the inhabitants of the Indian archipelago, those on the west coast of Africa, those of Madagascar and the Philippine islands, and even the Hottentots, have a custom which is considered to be a remnant of the same observance.

CIRCUMCISION, Feast of the, an ancient festival in the church, kept on Jan. 1, in commemoration of the circumcision of Jesus, being the 8th day after Dec. 25, which had been fixed upon to be observed as the nativity. In the 6th century, at least, there is a distinct office for this festival.

CIRCUMFERENCE. See Circle.

CIRCUMFERENTOR, an instrument serving to measure horizontal angles.

CIRCUMFLEX, in grammar, one of the 3 accents, formed by the union of the other 2, thus, ^, ˜. It is not used in English, and in French is usually a sign of the elision of a letter, and therefore indicates a somewhat prolonged sound.

CIRCUMNAVIGATION. Any voyage around the world is properly so called; but as modern commerce encircles every sea, the term is confined to continuous voyages around the globe for some specific purpose, as for survey, discovery, or other scientific object. We subjoin a list of the principal circumnavigators up to 1837; various circumnavigating expeditions have started since that time, especially from Russia: Magellan, 1519; Sir Francis Drake, 1577; Cavendish, 1586; Le Maire, 1615; Quiros, 1625; Tasman, 1642; Cowley, 1683; Dampier, 1689; Cooke, 1708; Clipperton, 1719; Roggewein, 1721; Anson (afterward Lord), 1740; Byron, 1764; Carteret, 1766; Bougainville, 1766; Wallis, 1766; Cook (the celebrated captain), 1768; King (successor of Cook), 1779; Portlocke, 1788; Wilkes, 1837; D'Urville, 1837.

CIRCUMPOLAR, an appellation given to stars which are so near the north pole as to revolve around it without setting. Their number varies according to the latitude of the observer. They are made use of to determine the elevation of the pole, which is a mean between the two elevations of the star at its inferior and superior passage of the meridian. The name may also be applied to the southern polar region and stars.

CIRCUMPOTATIO, a drinking around in succession, an ancient Egyptian custom at funerals, introduced also among the Greeks and Romans. Solon at Athens, and the decemviri at Rome, aimed to abolish this custom, thinking it indecorous that sorrow and ebriety should mingle together.

CIRCUMSCRIBED, in geometry, the epithet of a figure so drawn around a similar enclosed figure as to touch it with its sides or planes.

CIRCUMVALLATION, in the art of war, a ditch bordered by a parapet of earth constructed by a besieging army around its own camp. It may be either continuous or in detached sections, and is intended to guard the besiegers against attempts of the enemy to relieve the place. The defences are, of course, outward, as those of contravallation are inward toward the place invested. Lines of circumvallation are now seldom employed, a corps of observation being made use of instead.

CIRCUS, at Rome, a place reserved for public games, races, and shows of different kinds. The *circus maximus*, in the valley now called Via de' Cerchi, was founded by Tarquin the Elder. It gradually became one of the most magnificent structures of Rome. The original temporary platforms, erected at private expense, by patricians and equites, who alone witnessed the shows, were replaced by 3 galleries, or tiers of seats, running in a circular oblong form around the sandy arena. Iron railings 12 to 14 feet high, and a ditch 10 feet broad and 10 deep, a work of Cæsar, separated the seats from, and defended them against, the furious beasts of the arena. Through its middle length ran a low wall called *spina*, at each end of which were erected 3 wooden, afterward gilt, cylinders of conical shape, forming the goals of races. The spina was adorned with gilt statues, images of deities, reliefs, altars, and chapels, and at its middle with an obelisk 132 feet high, brought by Augustus from Egypt. There were also 2 platforms, on one of which reposed the images of 7 dolphins, on the other the 7 *ova*, imitations of eggs, which marked the number of the rounds done by the racers, one of the eggs being taken off after each. At one of the narrow sides of the circus the galleries were wanting, and replaced by the stores for chariots and horses. The length of the circus was at the time of Julius Cæsar more than 3 stadia, its breadth 400 feet, its circumference 8 stadia. Destroyed by fire under Nero, and rebuilt by Trajan, it was made by this emperor capable of containing 500,000 spectators, and completed under Constantine, who adorned it with another obelisk. The circus Flaminius or Apollinaris, erected probably by Caius Flaminius, in the Prata Flaminia, out of the city, and which in a show under Augustus was filled with water and became the scene where 86 crocodiles were killed; the circus of Sallust, near his gardens, destined for shows of sea fights; the Vaticanus, commenced by Caligula, completed by Nero; the Agonalis, erected by Alexander Severus; those of Flora and Hadrian; and the circus maximus, were all destroyed. A circus, attributed by antiquaries to Caracalla, near the Appian way, about 2 miles from the city, is the only one that remains in good preservation at Rome. More or less remarkable ruins of similar structures, erected in the ancient provinces of the Roman empire, are still visible in Alexandria, Rhodes, Athens, Gaza, Jerusalem, Nimes, Narbonne, &c. Modern circuses of different form and destination are frequent in the cities of Italy and Spain; that of Madrid, for bull fights, has room for 12,000 spectators. The *Cirque Olympique* of Paris, for equestrian games, is built in Grecian style, and embellished with statues.

CIRENCESTER (colloquially called CICESTER), a market town and parliamentary borough of Gloucestershire, England, on the river Churn, and on the Cheltenham branch of the Great Western railway, 18 m. S. E. of Gloucester, and 95 m. by railway N. W. of London; pop. in 1851, 6,096. It is a place of small trade, quiet and respectable appearance. It occupies the site of a Roman station called by Ptolemy, Corinium; by Richard of Cirencester, Corinum; by Antoninus, Durocornovium.

CIRILLO, DOMENICO, an Italian republican and naturalist, born in the kingdom of Naples in 1734, died on the scaffold in 1799. He officiated in early life as professor of botany, afterward accompanied Lady Walpole to France and England, became a fellow of the royal society of London, a friend of Buffon, D'Alembert, and Diderot, and on his return to Naples was appointed physician of the court. After the proclamation of the republic by the French, he was chosen representative of the Neapolitan people, and member of the legislative commission (1799); and on the reëstablishment of royalty he suffered death on the scaffold, rather than take the oath of allegiance or ask a pardon from King Ferdinand. His principal writings are, *Fundamenta Botanica*, 1787, 2 vols. 8vo., and *Entomologiæ Neapolitanæ Specimen*, 1787, folio.

CIRRIPEDES, CIRRHOPODA (Lat. *cirrus*, curly, and *pes*, a foot), a class of animals belonging to Cuvier's division of the *articulata*, though long regarded as belonging to the *mollusca*, with which they are arranged in conchological treatises. The barnacles and acorn shells formerly described among the multivalves are included in this class. Their bodies are soft and protected by the shelly covering secreted from their surface. But the anatomical structure of the cirripedes (of the nervous system particularly) connects them with the articulata, and so also their development from the egg and subsequent transformation. (See BARNACLE.) A peculiar feature is the prolongation of the body and its division into several branches,
each of which is furnished with a
arms filled with cilia or hair-lik
sembling feathers, and which are
moving in the water for the purpose
ing food. The class is divided into tw
pal groups, the pedunculated and the
the former having a long peduncle, or
by which the animal fastens himself to
wood; and the latter being deficient
the shell consequently lying close to
stance to which the animal adheres.
genera of each group are described.

CIRTA, an ancient city of Numidia,
Punic architects, situated on a steep
almost encircled by a tributary of the
It was in the country of the Massylii
residence of their kings. It was
Constantine, and received from him
of Constantina, which it still retains
umphal arch, which was the finest
the ancient city, has been removed to

CISALPINE REPUBLIC, a comm
founded in 1797, in Italy, by Bonaparte
ing of the Cispadane and Transpadane
which he had previously established.
braced Austrian Lombardy, including
the Venetian provinces of Bergamo,
and Cremona, Verona and Rovigo, th
of Modena, the principalities of Massa
rara, with the 3 legations of Bologna
and Ravenna, beside a part of the G
was divided into 10 departments,
as the capital. Austria acknowle
istence by the treaty of Campo
followed the destinies of the French
On their defeat in 1798, the republic
ished, and reëstablished in 1800,
tory of Marengo. Austria was ag
acknowledge this independent state
clusion of the peace at Luneville. In
Cisalpine, it was now called the Ital
lic, and under the empire it be
dom of Italy.

CISPADANE REPUBLIC, a republi
organized in Italy after the battle of
1796. It consisted of Modena, Reggio,
and Bologna, being separated from
padane republic by the Po (Padus), f
it derived its name. In 1797 the
was merged in the Cisalpine republic.

CISSOID, a curve resembling an
employed by Diocles to divide an ang
equal parts.

CISTERCIANS, a celebrated and
tended branch of the Benedictine or
ed in the 11th century by St. Robert,
man by birth, and a Benedictine abb
being very zealous for the strict obser
the Benedictine rule, and unsuccessful
efforts to enforce it in his abbey, plac
self at the head of some hermits, and
with them at Molesme. Some diffic
ing in this new community, he left
pany with several others, and made a
tlement at Citeaux, near Dijon, in the
of Châlons-sur-Marne (1098). Af

and ships for some time, the taken under the protec- Burgundy, and the bish- latter of whom erected it appointed St. Robert abbot. recalled or a time to Molesme, the direction of St. Al- , in 1109, St. Stephen , became abbot. The in this community were so any of the members died, and no d to enter the order, which was extinction. The arrival of St. young men, mostly of noble however, from destruction, and it new life. It soon began to extend itself, so that in 1151 the abbeys had increased to 500, and in The order became so powerful popes were indebted to its recogni- ort during the confusion of the for the maintenance of their inals, archbishops, and bishops the general chapter of abbots. Eugenius III. and Benedict XII.), and a great number of bishops, the order, and several kings d its habit. St. Bernard for literature and science in ancy, and took measures to nastery furnished with an excel- . In this respect the Cistercians l service to the human race. ch was music. The golden continued until the relaxation and the foundation of the Domin- ciscans, caused it to begin to de- dinary and oft-repeated efforts bring it back to its pristine state, proved only partially successful. The m produced several new congrega- C rcian rule, the principal of uardines and Feuillants. The s of the Cistercian order at small; there are 16 in Aus- members, and some in Switzer- ly, and Belgium. There is also one in shire, England, called Mt. St. Bernard.

RN, a reservoir for water, usually con- domestic or manufacturing purposes. in the ground, cisterns differ from ing their water by artificial chan- from the natural springs. In dry where the supply of spring water is they are made to take the place of are consequently constructed of large ished with numerous channels for rain water that falls upon the surface. They are commonly built a cheaper and very efficient me- o sink a hole in the ground, and plas- hydraulic cement directly upon the sand and gravel thus cemented over well, and make tight and per- and bottom to the cistern. Cis- made with economy of plank, and may then be conveniently moved from one place to another.

CITADEL (Ital. *citadella*, from the Lat. *civitas*), a place of arms, a castle or small fortress, situated within or adjoining a city, and destined either to maintain its inhabitants in subjection, or to serve as the last defense of its garrison against a besieging army. For these ends it must be fortified with bulwarks, have 2 gates, one communicating with the city, one for supplies or succors to the army in case of siege, contain room for 3,000 to 5,000 soldiers, and must command the fortifications of the city.

CITADINESCA, called also ruin and landscape marble, a name given to a marble of Florence, which presents appearances of palaces, towns, ruins, and rivers.

CITEAUX, a hamlet of France, department of Côte d'Or, once celebrated on account of its abbey, the chief house of the Cistercian order. The abbatial buildings, remains of which still exist, were magnificent. The surrounding country, mostly belonging to the convent, was greatly indebted to the management of the abbots for the superiority of its wines.

CITHÆRON, a range of mountains in Greece, separating Bœotia from Megaris and Attica. It is said to have derived its name from an early king of Platæa, who was an adviser of Jupiter in one of his angry dissensions with Juno. Hence the summit was sacred to Jupiter, and the festival of the Dædala, in honor of his reconciliation with his spouse, was celebrated upon it. Cithæron was also sacred to Bacchus, and the scene of his mystic rites. It was here, too, that Actæon was changed into a stag and chased by his own hounds, that Pentheus was torn to pieces by the Bacchic women upon whose orgies he was stealing a look, and that the infant Œdipus suffered his exposure. Cithæron was covered with a forest which abounded in game. The Cithæronian lion, slain by the hero Alcathous, was famed in mythology.

CITHARA, a musical instrument among the ancients, consisting of strings drawn across a sounding bottom, and somewhat resembling the modern guitar.

CITRIC ACID, the acid which gives to the fruits of the citron family their peculiar sour taste. It may be extracted from many fruits and vegetables, as oranges, currants, gooseberries, strawberries, raspberries, whortleberries, onions, and potatoes. The red elder berry contains so much of it that it has been proposed to substitute it in part for the limes and lemons, from which the acid is now wholly prepared. The manufacture of citric acid is conducted at but few large establishments; but on a small scale it may be prepared by the same process that is adopted in the large way. Lemon juice is imported in a concentrated state, produced by evaporation at a gentle heat. It consists of citric acid 6 to 7 per cent., alcohol 5 to 6, and the remainder water, inorganic salts, &c. By some persons it is allowed to partially ferment, for the purpose of evaporating the clear liquor

from the mucilage; or it is clarified in the usual method by the use of albumen in the form of the white of an egg. Carbonate of lime in fine powder is then gradually added, and stirred in so long as the effervescence continues. Citrate of lime—an insoluble powder—forms, and, separated by drawing off the watery liquor, is then well washed with warm water. This salt is then intimately mixed with strong sulphuric acid diluted with 6 parts of water. After some hours the citrate is decomposed, the sulphuric acid having taken up the lime and formed an insoluble sulphate, setting the citric acid free. This, separated by decanting and filtering, is evaporated in leaden pans till it attains the specific gravity 1.13. The evaporation is then continued by a water or steam bath, till the liquor begins to be sirupy, or to be covered with a thin pellicle. It is then instantly removed from the fire, and put aside to crystallize, the mother liquor after a few days being evaporated as above, and again set to crystallize, and so on as long as clean crystals are obtained. To obtain pure citric acid all the crystals should be redissolved and recrystallized, it may be several times, and the solution digested with bone black. A gallon of lemon juice should make about 8 ounces of crystals; more than this is sometimes obtained. Attempts have been made to prepare the citrate of lime for exportation instead of the lemon juice, to reduce the cost of transportation; but its liability to ferment, which destroys the citric acid by converting it into acetic and butyric acids, prevents this method from being employed. Citric acid was first obtained by Scheele in 1784. The crystals are transparent, in the form of rhombic prisms, with summits of 4 trapezoidal faces. The salt is soluble in water, warm or cold, as also in alcohol, but not in ether. Its specific gravity is 1.6. Its taste is intensely acid, and almost caustic, but still agreeable. It is distinguished from other vegetable acids by its depositing an insoluble citrate when heated with lime water, by the form of its crystals, and also by forming a deliquescent salt with potassa. The crystals are combinations of one equivalent of citric acid with either 3, 4, or 5 of water, according to the method and temperature by which they have been obtained. The anhydrous acid, as it exists in the citrate of silver, is represented by the formula $C_{12}H_5O_{11}$; but it has never been isolated.—Citric acid is much used at sea as an anti-scorbutic, but the raw lemon juice is thought to be more efficient. English vessels are all required by law to carry a certain quantity of the latter for each man employed; and a single importer in Liverpool is stated by Dr. Muspratt to keep a stock of some 20,000 gallons. It goes to the manufacture of citric acid, as already stated, in a concentrated form; but that intended for the use of ships is protected from fermentation by the addition of some spirit. When the late expeditions to the arctic regions and Behring's straits were
fitted out, the juice was prepared fo
tion, one half by slightly boiling,
bottling after it became cool; the
made to come up into the neck of
the space above was filled with the
oil, and the bottle was then corked
The other half was bottled in the
with the addition of $\frac{1}{10}$ the quantity
Both methods proved perfectly succ
19 months that the ships were ab
single case of scurvy occurred
the juice was perfectly good at the
voyage. It should be noted that in c
of the inferior qualities of the impo
that prepared for these expeditions w
from the fruit brought to England.
ported juice does not appear to be in
its introduction into Great Britain.
pratt admits that, "however unpleas
tion, it is a fact that hundreds of ship
Liverpool and London with an articl
cated with oil of vitriol, &c.," and
tensely sour article is usually prefer
genuine juice. Citric acid is also la
terated, sometimes to an almost incr
centage, with tartaric acid. Acetat
sa, added to its solution in cold wat
tartaric acid be present, throw dow
crystalline precipitate of bitartrate
(cream of tartar). It sometimes a
some sulphuric acid. Beside its use
scorbutic, citric acid is employed i
lemon juice for the preparation of
drinks, and in the arts it is of v
calico printers.

CITRON, the fruit of a low, ever
(*citrus medica*, Linn.), which belon
same genus as the lime, lemon,
orange trees, attains in its wild
of about 8 feet, and is erect and pri
long reclining branches. Its leaves are
oblong-acute, subserrate, and pale
petioles are naked, and its flowers 4
and externally purple; and its fruit
about 6 inches long, furrowed, wi
tuberance at the tip, and with 2
outer thin, greenish yellow, with n
miliary glands, full of a most frag
the inner thick, fungous, and white.
of this genus are among the most b
fruit-bearing trees, are indigenous in t
and are supposed to be alluded to in t
apples which the Greeks attributed t
dens of the Hesperides. There is, ho
evidence that any of them were cultiv
by the Greeks or earlier Romans.
tree, the most beautiful of them, and t
troduced into Europe, was obtained fr
and perhaps Assyria, and was first cul
Italy by Palladius in the 2d century
the Orient it is constantly in blo
and fruit always hanging upon the
ther; at Nice, Genoa, and Naples, an
the West Indies, it endures the open
Florence and Milan it requires prot
winter, and in more northern clim

vatories. In China there is a
, with large and solid fruit, di-
into 5 distinct lobes, whence it
y the Chinese the fingered citron. It
eeable fragrance on fine porce-
ting rooms. The citron is a
acid fruit, rarely eaten raw, and highly
its fragrant rind, which by being
in ar becomes a delicate sweet-
outside of the fruit and the
of citron is prepared; the pulp
acid; the seeds are very bitter
and the bark of the root is a febri-
e well-known varieties of citron
It . and about 20 in French, and
es. Seventeen varieties are
ed, and the methods of their
given, in Risso's *Histoire natu-*
(Paris, 1818).

musical instrument of the lute
ed in the old English dramatists.
a regular part of the furniture
shop,

cité, from the Lat. *civitas*, a
a large collection of residen-
l industry. In the United
y distinguished from a town by
rate government. In England
corporate town which is a
cathedral church. The
burgh, which still termi-
names of cities, as Edinburgh.
; from some natural advan-
or manufactures, without
ary power can render them
patronage of government may
a centre of population and
eligible site to another, as from
Petersburg, or may create an ar-
of limited extent, as at Washing-
the feudal system cities were sub-
jurisdiction of some great lord.
violence of the 11th century, several
an cities usurped the right of self-
; others obtained the right by
r gratuity; and during the succeeding
the monarchs and great barons gen-
oughout Europe enfranchised by char-
ies in their domains, and granted them
ge of government by officers of their
nation.

D REAL, or SAN CRISTOVAL, a town
ital of the department of Chiapa,
ertile plain on the Rio de los Zel-
m. S. E. of Vera Cruz; pop. 7,649.
a variety of names, having been
as Villa Real, then as Villa Viciosa,
val de los Llanos, and finally by
, and at times by that of Ciu-
It contains a cathedral, a
scopal seminary, 3 monasteries,
a hospital, and some manufactories.
ty are an intermittent spring and
with stalactites. The town was
n the site of an Indian city.

REAL, a province of Spain, in the S. part of New Castile, formed from the ancient province of La Mancha; area, 11,768 sq. m.; pop. 302,593. It consists mainly of barren plains skirted N. and S. by lofty sierras, some of which are clad with forests, and enclose many deep valleys. They give rise to several rivers, most of them affluents of the Guadiana, which impart fertility to the land in their immediate vicinity. Wheat, rye, barley, maize, oats, beans, pease, hemp, flax, aniseed, and esparto are cultivated, and horned cattle, horses, mules, asses, sheep, goats, and pigs are reared. The mountains contain iron, silver, copper, lead, antimony, cinnabar, coal, marble, granite, quartzite, jasper, &c. Hot and cold mineral springs are abundant. The manufactures include woollen, linen, cotton, silk, hardware, earthenware, saltpetre, soap, wine, oil, and brandy, and the exports consist of the above articles, with many of the natural products. The imports are lace, perfumery, sugar, coffee, and rice. The province contains more schools than most parts of Spain in proportion to its population, but the ratio of attendance is strangely below the average.—CIUDAD REAL, the capital of the above province, is situated in a low plain about 5 m. from the Guadiana and 100 m. S. of Madrid; pop. 11,500. Built after the expulsion of the Moors from La Mancha to serve as a check upon the remnant of that people who still maintained themselves in the Sierra Morena, it was originally a place of strength, and yet retains a portion of its ancient defences, which, with its solid-looking houses and rich surrounding vegetation, convey at distant view a pleasing impression. A closer inspection shows the walls to be ruinous, the town dull and half deserted. The streets, however, are wide, level, and regular; most of the houses have iron railings and balconies, and those facing the principal public square are lined with arcades. The handsomest building is the church of Santa Maria, consisting only of a Gothic nave of magnificent proportions with a high stone tower. There are several other churches, 6 monasteries, 3 nunneries, hospitals, a secondary college, a superior school, a house of refuge for juvenile vagrants, and fine barracks. The manufactures consist chiefly of coarse strong woollens, linens, table-cloths, and watches. Trade is confined principally to grain, potatoes, wine, fruits, and mules. Before the final conquest of Granada this was a frontier city and seat of the court of chancery for the south. It was the head-quarters of the *Hermandad*, or holy brotherhood, founded in 1249, for the suppression of highway robbery. A battle was fought in the vicinity, March 27, 1809, in which Gen. Sebastiani, with 12,000 men, gained an easy victory over 19,000 Spaniards commanded by Urbino, count of Cartoajal. The Spaniards lost 1,000 killed, 3,000 prisoners, and a quantity of arms and provisions.

CIUDAD RODRIGO, a town of Spain, in the province of Salamanca, Leon, situated on the right bank of the Agueda, 15 m. from the Portuguese boundary, and 55 m. S.W. of Salamanca; pop. 4,852. It occupies one of the most important positions on the frontiers of Spain, and is fortified by walls, a ditch, a castle, and other works, ranking as a fortress of the 2d class. It derives its name from its founder, Count Rodrigo Gonzales Giron, who lived about the middle of the 12th century. It is indifferently built, poverty-stricken, and dirty, but has a few interesting structures, including the cathedral, a cruciform edifice which has suffered somewhat from sieges, the chapel of Cerralbo, still beautiful despite its dilapidation, an Augustinian convent and church, and a handsome bridge of 7 arches across the Agueda, connecting the city with its suburbs. In the market place are 3 Roman columns with inscriptions, brought from ancient Malabriga, and borne by the city for its arms. Ciudad Rodrigo occupies a prominent place in the early annals of Spain, but its present historical importance depends mainly upon the events of the peninsular war. In 1810 it was invested by the French under Masséna, was gallantly defended by the Spanish garrison, and after a siege of about 40 days was forced to capitulate. On Jan. 8, 1812, Wellington suddenly crossed the Agueda, carried one of the advanced redoubts by assault, established his batteries, and on the 14th commenced a furious bombardment, which was returned with equal vigor. On the 19th, 2 breaches were declared practicable, and on that night the town was stormed in the face of a murderous fire. By this exploit, one of the most brilliant and important of the war, the British captured 150 guns and a vast amount of stores, but lost 1,300 men, including Gens. McKinnon and Craufurd. The French lost 300 killed and 1,500 made prisoners. Wellington was immediately afterward created duke of Ciudad Rodrigo by Spain, marquis of Torres Vedras by Portugal, and earl of Wellington by England.

CIVET (*viverra civetta*, Linn.), a digitigrade carnivorous mammal, belonging to the family *viverridæ*, inhabiting northern Africa. The dentition is less carnivorous than that of the cats, there being 3 false molars above and 4 below, the anterior of which occasionally drops out; 2 tuberculous, tolerably large above, and 1 only below; the lower carnivorous tooth has even 2 projecting tubercles on the inner side in front, and the whole of it is more or less tuberculous. The tongue is rough, the claws are partly straightened in walking, and between the anus and the genital opening is a sac, divided into 2 parts, lined with glands which secrete an unctuous substance of a strong musk-like odor. The civet is about 2½ feet long from the nose to the end of the tail, the latter being more than a foot of this length; and the height is about 15 inches. The general color is an iron gray, with transverse black bands, narrow and parallel on the shoulders, wider on the body and thighs, and sometimes forming curved eye-like spots; the tail has 4 or 5 blackish rings, and the last 6 inches entirely black; the neck is whitish, with 3 black bands; the muzzle is black, except the upper lip, which is white, and there is no spot under the eye as in the zibeth; the limbs are black; along the back is a strong, stiff, erectile mane; the fore part of the ears is grayish white and the hind part black; the under parts are white, the hairs being dark at the base. These colors vary somewhat in different specimens. According to Cuvier, the cavities which contain the scent have their internal surface slightly covered with fine hair and pierced with many holes, the openings of superficial oval follicles, whose cavities receive the odorous substance and discharge it into the main bag in a vermicelli-like form; the follicles as well as the bag may be compressed by muscular action at the will of the animal. Beside this, the civet secretes a dark-colored fetid liquid, which issues from an opening on each side of the anus. In Abyssinia and some parts of Asia the civet is kept in considerable numbers in a state of domestication for the sake of its musky secretion. In confinement it is a very sleepy animal, doing nothing but eat and sleep. When irritated, the musky odor becomes stronger. When the bag becomes filled with the hardened secretion, it falls out in pieces about the size of an almond. In its wild state it is a nocturnal animal, preying upon the smaller mammals, birds, and reptiles, and occasionally eating fruits; in confinement it is more omnivorous.—The zibeth and the rasse (*V. zibetha*, Linn., and *V. rasse*, Horsf.), the former inhabiting the Asiatic continent and the latter the islands of the Indian archipelago, especially Java, both secrete an odorous substance like civet, a favorite perfume in the East; it is now less esteemed in Europe than musk. When first secreted it is semi-liquid and yellowish in color, becoming harder and brown on exposure to the air; the taste is bitter and the odor less agreeable than musk. It is insoluble in water, slightly soluble in ether and cold alcohol, and almost entirely so in hot alcohol. It contains a volatile oil and free ammonia. Formerly it was highly esteemed as a stimulant and antispasmodic medicine, but castor and musk, also animal secretions, have taken its place, and its use is now confined to the manufacture of perfumery.

CIVIC CROWN (Lat. *corona civica*), a mark of high honor, bestowed in Rome upon him who saved the life of a citizen in battle or assault. It consisted of a chaplet of oak leaves, the oak being sacred to Jupiter, the guardian of the city. He who obtained it could always wear it; was, with his father and paternal grandfather, free from every burden of citizenship; and had a seat reserved near the benches of the senate at the public shows, where, when he appeared, he was greeted by the rising up of the people and senators. A civic crown was proposed but not granted to Cicero for the detection of the conspiracy of Catiline; and one was by a decree of the senate suspended to the pediment of the house of Augustus.

CIVIL LAW. By this title is designated the
Roman law, with the modifications there-
have been made in the different coun-
Europe into which that law has been
1. The Roman jurists used the term in
ited sense. *Jus civile* was the law of the
state as administered among its own citi-
was distinguished from the *jus gen-*
laws of other nations, which were to
t recognized in controversies between
were not citizens, or between them
an citizens. Certain principles of these
, which were commended by a natu-
, were also admitted by the prætors
retionary power, which will be more
adverted to in a subsequent part of
, and gradually became incorporated
national law. The distinction is thus
in the Digest: *Omnes populi qui legi-
bus reguntur, partim suo proprio, par-
uni omnium hominum jure utuntur.
l quisque populus ipse sibi jus constituit
proprium civitatis est, vocaturque jus*
ivil law, then, according to this defini-
the proper law of the state (*jus pro-
ivitatis*), in distinction from natural law
ne omnium hominum). In a still
ted sense, and with some inconsis-
lication, the term was sometimes
n lawyers in distinction from *jus*
e equity introduced by the præ-
n it was sometimes applied to the
d in the opinions of jurists (*re-
ntium*) and decisions of the courts
tio fori), which law was also designated
ritas prudentum, sententiæ receptæ, and
, and included what we should call stat-
: the decrees of the senate and people
the people in their independent legis-
plebiscita), of the senate (*senatus con-*
and the edicts of the emperors (*constitu-
cipum*). The Roman law, as embodied
pilation, made by order of Justinian,
known by the title of the *Corpus Ju-
ilis*, was not a code, but a digest of the
nd legislation of many centuries. Of
l authorities very little has come
xcept what is contained in that di-
yet is necessary, for the proper under-
of the law as thus enucleated, to know
of the method of its formation, and
us sources from which it was derived.
aw of the 12 tables, which was compiled
U. C. 300, comes first in the order of
this was itself, so far as respects pri-
, compiled from still earlier sources. To
ent it was merely the reduction to writing
had before been a matter of usage; but
bject had in view was political rather
ative, that is, the settlement of the
etween the patricians and plebeians
e rights of the latter, and the regulation
ial proceedings, so as to check the arbi-
power of the consuls. This law was
d in the *comitia centuriata*, and formed
of the Roman public and private laws for all subsequent time; but it was regarded rather as a part of the law of custom than as a new code, or as a legislative enactment of general laws. All that we know of them is from fragments of the commentaries upon them by Gaius, Ulpian, and others, contained in the Pandects, and from Gaius's Institutes, and some passages in the writings of Cicero and in Livy's history. 2. In tracing the subsequent accessions to the law it will be convenient to consider them under the two heads of *jus scriptum*, legislative law, and *jus non scriptum*, the law of custom. A. Under the former are included the *leges*, laws passed in the *comitia centuriata; plebiscita*, laws passed in the *comitia tributa;* and the *senatus consulta*, decrees of the senate. The *comitia centuriata*, which was an assembly of the people convened by a senatorial magistrate, had originally the sole power of passing laws; but after a long struggle the *comitia tributa*, which was an assembly of the people convened by plebeian magistrates (the tribunes), acquired the power of passing laws which should bind the whole people. This was by virtue of a law passed in the *comitia centuriata*, A. U. C. 305, and several times afterward confirmed. In consequence of this concession by the patricians, the *senatus consulta* (decrees of the senate) were acknowledged by the plebeians as being also obligatory; but the intercession or veto of the tribunes nullified any legislative act of the senate. The coördinate power of two distinct legislative assemblies was an anomaly of the Roman government. It is remarkable that the two conflicted so little with each other. Few general laws were passed in either of the *comitia*. The election of the higher class of magistrates, trials for treason, declaration of war, and foreign affairs when any great emergency occurred, chiefly occupied the *comitia centuriata*. Laws were also passed relating to private rights; but the latter class of laws were more frequently passed in the *comitia tributa*. Under the emperors the forms of legislation still continued for a considerable period. Assemblies of the people were held, *leges* and *plebiscita* were enacted, some of which related to private rights, and were important. The decrees of the senate became more numerous as the form of legislation by the people declined. They were proposed by the emperor, either in person (*ad orationem*), or by message in writing (*per epistolam*), or by some one at his instance. Lastly, the emperor himself assumed the right of making ordinances which had the force of law, which were called *constitutiones principum*. B. Under the *lex non scripta* (law of custom) are included: *a*, ancient usages (*mores majorum*), to which head, as before remarked, belonged the law of the 12 tables, which was but a digest of usages relative to private rights; also any other customary law not expressly derived from a legislative act; *b*, the modifications or additions growing out of the administration of the laws, especially in the courts of the prætors. The office of the *prætor*

urbanus was established A. U. C. 387, for the decision of causes between citizens. The *prætor peregrinus* was first appointed A. U. C. 508, whose business was the deciding of causes between citizens and foreigners, or between the latter alone. The term of office was one year, and at the commencement of the term the prætor published an edict containing the rules or principles according to which he should administer the laws. The same form was doubtless used by successive prætors, with only such changes as were recommended by a continually enlarging experience. The court itself, being of the highest judicial authority, would necessarily have a large discretion, and would perhaps be restrained only by a due regard to consistency with itself. What had become established usage could not readily be departed from; but new principles might be adopted for the decision of new cases, and even a settled course of practice might be innovated upon by fictitious suggestions or ingenious distinctions. This branch of jurisprudence is the most interesting part of the Roman law. Some analogy to it may be found in the system of English chancery law, which also grew out of a like discretion, at first arbitrary, but afterward fixed by precedent, yet with a more ample liberty in cases not absolutely determined by previous adjudication than belonged to the common law courts, and in respect to forms of proceeding and modes of relief, the court having the power at all times of making its own law by general rules. The edicts of the prætors, instead of being regarded as new ordinances each year, may more properly be considered as a single edict, republished annually with some additions or alterations, and so uniform was it that it was designated by the term *perpetuus;* whence in the law procured by the tribune Cornelius, A. U. C. 687, it was required that the prætors should conform to their perpetual edicts (*ut prætores ex edictis suis perpetuis jus dicerent*), the object of which law was to prevent any changes during the term. The prætorian edict was revised by Salvius Julianus in the reign of Hadrian. The whole was rearranged; what was obsolete was omitted, and some additions made; it was then confirmed by a decree of the senate, after which time it underwent but little change. In this revision the edict of the prætor peregrinus was incorporated with that of the prætor urbanus. There were also edicts of the ædiles which related to police regulations, and of proconsuls and proprætors in the provinces. The provincial edicts must have furnished some suggestions to the city prætors, and contributed doubtless to the modification of the general edict. In the revision they were all probably consulted. The imperial council, which acted in a judicial as well as political capacity, and was in fact an appellate court to which causes were brought by appeal from the prætorian and provincial courts, added to the laws by its decisions (*decreta*), and by its opinions (*rescripta*) furnished to public officers and others for their direc
opinions and writings of distingui
These related as well to the *lex* s
to the *lex non scripta*, as advice w
wanted for the construction of
decrees. Indeed, it was not unusu
trates themselves to ask the opinic
nent jurists, and these were afterwa
Augustus authorized certain lawyers
responses in his name. These were pe
equal authority with the *rescripta* of
peror; at all events they were treated
respect than the opinions of other
Hadrian enacted that the unanimous o
those jurists who were authorized to
should be considered law; this refers
to opinions which had before been g
well as those which should thereafter
tained. Then there were commentari
the 12 tables, the prætorian edicts, de
the people, &c., elementary works (cal
tutiones, *Regulæ*, and the like), t
single subjects, and annotations up
writers. These writings constituted in
law long prior to the time of Justi
original sources being rarely inquired
judges, or cited by lawyers, and the
these writings made it difficult in
time even to refer to them fully. It
these that the Pandects were compile
most eminent lawyers lived in the pe
tween the emperors Hadrian and Al
Severus. The profoundest disquisi
law were produced when the gover
become a despotism, and a far-reac
sion preyed upon private enterp
trial art. The age of the classic juri
writings are the admiration of the w
that of an autocracy which, with but o
intervals of a pure administration, ia
crushed down the vital spirit of society
most celebrated of these jurists are Gai
nian, Ulpian, Paulus, and Modestinus
this period the constitutions and re
emperors seemed to take the place
writings; perhaps, owing to the dec
science, it was necessary to furnish
cision in a large number of cases, wit
ing to resort to ancient authorities.
became so numerous that a digest be
sary. Two collections were made,
rescripts, in the 5th century, one by
and one by Hermogenes. A more c
lection was made by order of the em
dosius II., including the edicts and
the emperors, which was published
A. D. 438. The ordinances of the e
sued after that time were called *no*
væ constitutiones.—We now come to
prepared by the order of Justinian. 1.
of all the imperial constitutions,
was obsolete, and adding such new
as were required, the whole being ar
der appropriate titles. This work,
designated as the *Codex Justinian*
known as the *Codex Vetus*, was

re complete edition, and is not
An abridgment of the writings
was de, in which the most
preserved, what was obso-
ctions reconciled, and a
de of the whole. This
17 commissioners, of
was the head. It was com-
0. and was completed in three
ilation consisted of extracts
who were regarded as of any
extracts were each inscribed
(proposition) and an *inscrip-*
m what works they were taken;
50 books, and was entitled *Di-*
esta Juris enucleati ex omni ve-
The term *Pandectæ* was from
nd δεχομαι, signifying a general
r. It is a curious incident that
od of citing the Digest by the
to its rise from the Greek
There have been many
digest. The old form was
dotium, *L. profectitia* § *Si Pa-*
is the Digest; *de jure dotium*
f the title; *L.* the law (which
ation of the several extracts).
fr. (fragment) is substituted for
§ 6, *D. de jure dotium* (23, 3),
being the book and title; but
on to cite simply by numbers,
fr. 5, § 6. 3. An elementary
nes) was published at the same
andects, which, as has been be-
was in fact a revised edition of
of Gaius, omitting what was ob-
ng references to the new consti-
ian. 4. A revision of the code
alled *Codex Repetitæ Prælectio-*
ined the new constitutions that
by Justinian since the first code
to which were added decisions
ich the compilers of the Digest,
orities in conflict, did not un-
but referred them to the em-
e 50 in number, and at first
eparately, but afterward mostly
e new code. 5. The new con-
by Justinian after the publica-
code, were collected after his
some few which had been issued
rs, making 168 in all, together
elating to single cities or prov-
re of no general importance.
as called *Novellæ Constitutiones*,
he Roman law as incorporated
rpus Juris Civilis. Of the utility
n, indeed of the absolute ne-
it if the ancient law was still
, there can be no doubt, and it
any one should have attributed
ption of all further advance in
d the loss of the original works
compilation was made. Legal
declining; it was extra-
and acumen still

could be found, adequate to the work of collating so great a number of writers and extracting what was most important to be preserved. It cannot be supposed that in the ordinary administration of the laws, the writings of the old jurists were actually consulted to any great extent. A few might have familiar acquaintance with these venerable authorities, but to the greater number of lawyers and judges they must have been of little practical use. What has no immediate value will not be likely to be preserved, and but for the copious extracts in the Pandects, it is reasonable to suppose there might have been an entire loss of the originals, instead of having, as we may presume we now have, a large proportion of what was most worthy of preservation. The greater part of the *Novellæ Constitutiones* were written originally in Greek. A Latin translation of 134 novels (called the *Versio Vulgata*) is the version contained in the *Corpus Juris*, and is said to be badly done. All the compilations made by Justinian were originally published in Latin. They were soon after translated into Greek; new constitutions were issued by the successors of Justinian, also in Greek, and various commentaries were written, in consequence of which a new compilation became necessary. Such a compilation was commenced by Basilius Macedo, A.D. 876, and completed by his son Leo, A.D. 887. It was called the *Basilica*, and continued to be the basis of private law in the Greek empire until the fall of Constantinople, and has since been retained by the modern Greeks, to whom the Turks permitted the use of their own laws. —In western Europe the Roman law continued to be administered after the breaking up of the imperial government, but with important modifications. In most of the conquered provinces the Romans were allowed to be governed by their own laws, while the conquerors had other laws for themselves. Even in those parts of the empire where the barbarian rule was most complete, the superior civilization of the conquered people still had an influence upon the administration of the laws, and many of the principles and modes of proceeding which had previously existed may be discovered in the fragmentary notices which remain of the laws of the conquerors. Thus in northern Gaul, which was conquered by the Franks, although no compilation of laws was made for the use of the Roman citizens, yet in the two codes of Frankish law, the Salic and Ripuarian, it is repeatedly mentioned that the Romans were to be judged according to the Roman law. Several decrees were made by the Frank kings in the 6th century to the same effect. Again, in a book of formulæ published, as is supposed, in the 8th century, a large number of the forms relating to the enfranchisement of slaves, testaments, prescriptions, &c., are strictly in accordance with the old Roman precedents, which proves that they had remained in habitual use. Many civil acts are still extant, as sales, testaments, &c., which were performed according to

the Roman mode in the *curia* and were inscribed upon the registers. So also the terms which were used in the Roman municipal system, as duumvirs, curia, &c., reappear in Frankish records of an early period. Lastly, the chroniclers of the 6th and 7th centuries speak of the study of the Roman laws. Auvergnat Andarchius, who lived in the 6th century, is said to have been learned in the books of the Theodosian law; St. Bonet in the 7th century is said to have been learned in the decrees of Theodosius; and Didies, bishop of Cahors in the same century, is said to have applied himself to the study of the Roman laws. The Roman municipal system must therefore have continued in force, and civil legislation have been much influenced by the imperial code even in Frankish Gaul. But in the kingdoms of the Ostrogoths, Visigoths, and Burgundians, compilations of Roman laws were published which are still extant. Theodoric, king of the Ostrogoths, issued an edict at Rome, A. D. 500, which was intended for the whole people, as well Ostrogoths as Romans. It was compiled entirely from the Roman law, especially the Theodosian code, the later constitutions, and a work of Paulus, *Pauli Sententiæ Receptæ;* but these were used in an arbitrary manner, without much regard to the method of the originals. Alaric II., king of the Visigoths, published in the year 506 a collection of laws for the use of his Roman subjects, which was then called *Lex Romana*, but is now known by the title of *Breviarium Alaricum.* This collection consisted of: 1, the Theodosian code in 16 books; 2, the novels (*Novæ Constitutiones*) of Theodosius, Valentinian, and some of their successors; 3, the Institutes of Gaius; 4, the 5 books of Paulus, entitled *Sententiæ Receptæ;* 5, the Gregorian and Hermogenian codes (the collections of imperial constitutions and rescripts from Hadrian to Constantine); 6, an extract from a work of Papinian, entitled *Papiniani Liber Responsorum.* These were accompanied by an interpretation distinct from the original, except that the text and interpretation of the Institutes of Gaius were fused into one. The constitutions are not all reproduced, but those which are inserted are entire. The interpretation, however, explains and modifies the laws so as to adapt them to the new state of society. Thus it is said in the interpretation that what was formerly done by the prætor (elsewhere the *præses*) shall now be executed by judges of the city; emancipation, which was formerly done before the *præses*, must now be done before the *curia.* Various alterations are referred to, showing that the ancient Roman municipality, though still retained, was gradually being converted into a democratical form; that is to say, the *curia* being recognized as vested with municipal powers, instead of the duumvirs and other magistrates, who under the Roman administration had exercised their powers as personal rights. We can perceive already the principle from which was developed the corporation of the middle ages. A third
collection of laws was in like manner published
by Sigismund, king of the Burgundians, A. D.
517, for the use of his Roman subjects. T
is less of the textual Roman law than
preceding collection of Alaric, and on the
quest of the Burgundians by the F
probably fell into disuse, and was re
the *Breviarium*, which was more exte
better adapted to the wants of socie
existing. This Burgundian collection is k
by the name of *Papiniani Responsor*
given by Cujas, who published a n
containing the *Breviarium* and the Burgu
laws, the former of which closed with a
tract from the *Papiniani Responsor*
which the editor understood to be t
mencement of the other collection. U
reconquest of Italy by Justinian, A. D.
compilations of law were introduced the
they continued to be used in that c
under the successive empires of the L
and Franks; but it appears that under
latter the *Breviarium* was also introduced
the use of the Lombard subjects.—Irr
and confusion must necessarily have
under this twofold administration of
the new kingdoms of the West, while th
but little of the intellectual cultivation by
alone these chaotic elements could be m
into a homogeneous form. The first
movement toward a systematic developm
the revival of legal science in Italy in the
century. The compilations of
then illustrated by annotations or glos
relieved much of the obscurity in w
originals were involved. Irnerius
of these annotators, and his succes
12th century, were called glossators.
utation attracted to the law school at
thousands of students from all parts of
and through them an influence was
to bear upon the crude systems
the different countries of Europe.
great zeal in the study of laws was
awakened. An original work, with the
Ulpianus de Jure edendo, was discovere
country, containing an exposition of th
of proceeding in the courts, chiefly
from Justinian's collections; and in the
tury a translation of the Roman law into
was made by order of Louis IX. Lec
the Roman law were delivered at
though prohibited by Pope Honori
1220, on account of the prejudice which
supposed would result to the canon
continued with increasing popul
that time the study of the Roman
the basis of legal education in Fra
influence of the clergy was doubtless
siderable cause of the increased
Roman laws. During several
referred to them as the secula
clergy; but in the 12th century (A. D.
collection was made by Gratian of all
relating to the clergy, and the distinc
then first established between the *jus*

onicum. In Spain and the Netherlands,
ly in the latter country, the civil law
cultivated with great success, and
ical works have been produced of
. The Italian universities were at-
by students in the 12th and 13th
which universities were estab-
r, in which professorships of the
laws were founded. The par-
t *doctores juris* to the laws with
had become familiar, would naturally
gradual introduction of those laws as
. The change was gradual, and had ac-
en place without any formal recognition
public authority. But in the year 1495
of the imperial chambers was ordered
er justice according to the imperial
an) and canon laws. In the organ-
of the di rent territorial governments
. t precedent has been followed,
r, so far as it is applicable, is
of Germany. In England
n law was never adopted as such, and
been less interfused with the system of
h have grown up in that country than
countries of Europe. Still the
the Roman law have been referred
English judges and writers, and
which the common law of England
ed to this process of assimila-
sting subject, which will be treat-
y in the article COMMON LAW.
siastical law is derived entirely
law, with only such modifica-
been made by acts of parliament.
y courts are governed by the prin-
dern civil law, that is, by the usages
nations in the more extended rela-
out of commercial enterprise, but
a basis the rules of the Roman
applicable.—The principal editions
orpus Juris are: 1, the 5th edition by
Gothofredus, published after his
son Jacob Gothofredus, Geneva,
which has been reprinted several times;
tion of Simon van Leeuwen, from the
red above mentioned, with the an-
many others, as well as the notes of
Amsterdam, 1663, fol., reprinted sev-
at Frankfort and Leipsic, 2 vols. 4to.;
cal edition by Gebauer, completed by
berg, Göttingen, 1776–'97, containing
readings and explanatory notes; 4,
similar edition by Schrader, Berlin,
several editions of the text and most
readings, without notes, published at
among which are the stereotyped edi-
Beck, 2 vols., 1829–'37, and another of
brothers, 1828–'37. Several valuable
n the history of the civil law and its
upon European civilization have ap-
within a recent period. We would par-
refer to Hugo's *Lehrbuch der Geschichte*
ischen Rechts, of which there is a French
on; Savigny's *Geschichte des Römischen*
im Mittelalter, which has been in part translated into French and English; Puchta's *Institutionen*; and Guizot's *Histoire de la civilisation en France.*

CIVIL LIST, in England, formerly the list of the entire expenses of the civil government (that is, with the exception of the expenditure for the army and the navy), or of all the heads of revenue appropriated for the supply of the civil government; according to a late law it embraces only the expenditures for the reigning monarch's household, the amount of which is fixed by parliament at the accession of the sovereign. In the latter meaning of the term civil lists are common in the constitutional states of Europe, and exceptionally fixed by consent of the court even in those under absolute rule.

CIVILIS, CLAUDIUS, sometimes called JULIUS, leader of the revolt of the Germanic nation of the Batavi (settled around the mouths of the Rhine and Maas) against the Romans, A. D. 69–70, as chronicled by Tacitus. Although in the imperial service as prefect of a cohort, he had good cause of hatred against the Romans, who had wrongfully put his brother to death and sought his own life. When the contest for the purple was going on between Vitellius and Vespasian, the partisans of the latter urged Civilis to a feigned revolt, so as to prevent the legions in Germany favorable to Vitellius from marching on Rome. Civilis determined to make the revolt a real one. Under pretext of a festival he assembled the chiefs of his nation in a sacred grove and induced them to rise against the Roman yoke. Having placed a young man named Brinno at their head as nominal leader, the Batavi and two neighboring tribes, their allies, gained some skirmishes; whereon, it being no longer possible to conceal that Civilis was the prime mover, he put himself at the head of the insurgents. Still keeping up the fiction that he was fighting for Vespasian, he attacked and destroyed all the Roman camps on the Rhine, excepting Cologne and Mentz, which he retained. As the Batavi continued in arms after Vespasian had gained the empire, Cerealis was sent against them with a powerful force. Civilis offered to make Cerealis emperor of the Gauls if he would come over to their side, but the offer was declined. A campaign followed with varying success, till finally fortune turned against the insurgents, and they were driven into the island of Batavia. Cerealis offered his adversary terms. An interview between the generals took place on a bridge, where Tacitus leaves them conversing. The subsequent history of Civilis is unknown.

CIVITA CASTELLANA, a town of the Papal States, in the delegation of Viterbo. It is principally noted for the remains it contains of the ancient *Falerii* or *Falerium.* The ancient city was destroyed at the close of the first Punic war (241 B. C.). A new town was built on the plain 4 miles distant, where its remains are still seen, while the 3d town, or Civita Castellana, occupies the site of the first. The ruins on the plain are the best specimens of ancient military architecture now extant. The French under Gen. Macdonald achieved a victory here over the Neapolitans under Gen. Mack, Dec. 4, 1798.

CIVITA DI PENNE (anc. *Pinna Vestina*), a town of Naples, in the province of Abruzzo Ultra I., 10 m. W. of Pescara; pop. 8,000. It is situated at the foot of the Apennines and surrounded by beautiful meadows. It was the chief city of the Vestini, and distinguished for its obstinate resistance in the social war.

CIVITA VECCHIA, a town and chief seaport in the papal delegation of the same name, about 36 m. from Rome; pop. of the delegation, according to the census of 1853 (published in 1857), 20,701, and of the town about 8,000. The town and the harbor were founded by Trajan, who had a country seat here. The harbor consists of 2 marble piers, and is fronted by a breakwater. The water in the harbor is from 14 to 18 feet deep. There is a lighthouse on the breakwater, a quarantine, and docks, and a prison containing about 1,200 galley slaves. The present city was built and fortified by Pope Leo IV. The climate is not salubrious and the water is bad, which accounts for the smallness of the population. The town is well built, contains several fine churches and monuments of antiquity, and a small gallery of Etruscan antiquities in the town hall. Civita Vecchia is the key to central Italy, the best port of the Papal States in the Mediterranean, an important station for steamers from Marseilles, Genoa, and the Levant, and the point at which the majority of travellers enter southern Italy. Clement XII. made it a free port. The fortress was commenced under Julius II., after the designs of Michel Angelo, and completed under Paul III. In 1849 a French army arrived at Civita Vecchia to restore Pius IX. to the papal throne, and a French garrison is still stationed there (1858). In 1854 the value of the imports was about $3,000,000, and of the exports, $1,600,000. The entrances and clearances in 1854 comprised 1,259 vessels; tonnage, 94,418.

CIVITALI, Matteo, an Italian sculptor and architect, born at Lucca in 1435, died in 1501. He followed the occupation of a barber until about 1470, when he suddenly rose to the highest rank among the sculptors of his time. His first important work was the mausoleum erected in the cathedral at Lucca to Pietro de Noceto, secretary to Pope Nicholas V. His greatest works are 6 statues of white marble in the same church, representing personages of the Old Testament. Among his architectural works is the Bernardini palace at Lucca, of simple style, and also the little temple which contains the miraculous crucifix in the church of St. Martino.

CLACKAMAS, a N. W. co. of Oregon, extending from Willamette river on the W. to Cascade Range on the E., and bounded N. by the Columbia; pop. 1,859. The soil, particularly in the valleys of the rivers, is fertile. In 1850 the productions were 353 tons of hay, 16,281 bushels of wheat, 6,940 of oats, 18,893 of
potatoes, and 216 of corn. The cro
the largest obtained in any county
tory. Number of pupils in the public sc

CLACKMANNANSHIRE, an E.
land, and the smallest of that di
united kingdom, bounded S. and
river Forth, and having an area of
m.; pop. in 1851, 22,951. Its N. p
pied by the Ochil hills, between wh
rich alluvial valley of the Forth the
somewhat diversified, though its gen
is level. The Devon and the Black
as they are often called, the N. and
are the only considerable strea b
is watered. It is eminently
county. The lowlands produce w
and all the other crops common to
the hills are laid out in pastures, wh
black-faced breed of sheep and the
cattle; the fields are carefully manu
ing is almost universally practised:
wear an appearance of thrift; the
are well built, and the hedges are
trimmed. The minerals are abunda
uable; ironstone is wrought in the
Clackmannan; coal, to the amoun
260,000 tons per annum, is obtained
quarter, at Alloa, and at 4 other p
Stirling an excellent substitute for
buhr-stones, used for grinding, has b
and the Ochil hills are known to co
copper, lead, iron, cobalt, and
county has several large brewerie
ies, though not so many as formerly,
mills, and a number of iron works.
Clackmannan are the principal tow
turns one member to parliament in
with the county of Kinross.

CLAGGETT, John Thomas, fir
the Protestant Episcopal church i
Prince George's co., Oct. 2, 1742.
He was graduated at Princeton, 1
diately commenced the study of a
bishop of London, to whose dio
American colonies were attached, o
deacon Sept. 20, and priest Oct. 11,
was rector of All Saints' parish, Ca
to the revolutionary war, and aft
nexed St. James's parish to his p
Upon the organization of the dioc
land, he was elected its first b
consecrated in New York, 1792.

CLAIBORNE, the name of cou
eral of the United States. I. A W.
area 740 sq. m., with an uneven su
generally fertile soil; pop. in 1850,
whom 11,450 were slaves. The
river on the W. separates it from
and the Big Black river touches its
der. Productions in 1850, 488,003
corn, 13,924 of oats, 83,854 of swe
65,217 of peas and beans, 20,795 bale
and 1,973 lbs. of beeswax and ho
were 16 churches, and 365 pupils att
lic schools. The county was name
of Gen. Claiborne, an officer of the

Capital, Port Gibson. II. A N. parish of La., bordering on Ark., drained by the branches of Bayou d'Arbonne; area about 1,200 sq. m.; pop. in 1850, 7,471, of whom 2,522 were slaves. The surface is undulating, and partly covered with pine and other timber. The soil is good, though not of remarkable fertility. Productions in 1850, 2,483 bales of cotton, 234,470 bushels of corn, and 59,030 of sweet potatoes. There were 10 churches, and 1,250 pupils attending public schools. A strong tide of emigration has been flowing toward this part of the state for several years. Capital, Homer. III. A N. E. co. of Tenn., area about 350 sq. m., intersected by Powell's river, and bordering on Virginia; pop. in 1850, 9,369, of whom 660 were slaves. The surface is hilly, and in some places mountainous. Beside possessing a fertile soil, the county is rich in mines of lead, zinc, and iron, the latter of which are very extensive and profitably worked. The productions in 1850 were 441,061 bushels of corn, 88,440 of oats, 10,414 of wheat, and 9,595 lbs. of wool. Capital, Tazewell.

CLAIRAUT, ALEXIS CLAUDE, a French mathematician, born in Paris, May 7, 1713, died there, May 17, 1765. At the early age of 13 he read before the French academy a memoir upon 4 curves of his own discovery; at 16 had written a treatise upon curves of double curvature; and at 18 was admitted into the academy of sciences. His maturer powers were employed in researches upon the figure of the earth, on the theory of the moon, and on the orbit of Halley's comet. In each of these subjects he showed wonderful powers, and gained the most distinguished honor.

CLAIRON, CLAIRE JOSEPH HIPPOLYTE LEGRIS DE LATUDE, a French actress, born in Flanders in 1723, died in Paris, Jan. 18, 1803. She was not yet 13 years old when she appeared with great success at a Parisian theatre. She afterward became an opera singer, and finally was admitted in 1743 to the French theatre, where she first played the part of Phèdre. She greatly contributed to the success of several of Voltaire's tragedies; she paid a visit to the old poet at Ferney, and performed in his private theatre. Having declined to play in the *Siège de Calais* with a comedian guilty of an act of dishonesty, she was thrown into prison; and sufficient amends for such treatment having been denied her, she refused to reappear on the stage. She was then but 42 years of age, and her talent had reached its zenith. Her coquetry gave occasion for the publication of a scandalous pamphlet called *Histoire de Frétillon*. When 50 years old, she became the favorite of the margrave of Anspach, at whose court she resided for nearly 18 years. In 1791, on being supplanted by Lady Craven, she returned to Paris, and published there in 1799 her *Mémoires*, which derive interest from their remarks on dramatic art. Her life, spent in affluence, ended in a state bordering on destitution.

CLAIRVAUX, a village of France, department of Aube, on the left bank of the Aube river. It was the seat of a celebrated monastery dependent on the abbey of Cîteaux; the monastery was founded in 1114, in a wild glen, by Hugues, count of Champagne, and had St. Bernard as its first abbot. The foundation was increased by Thibaut, count of Champagne, and rich gifts were added by many kings of France, counts of Flanders, and other noble benefactors. The monks followed a rule of life which still further swelled their revenues. Timber was felled, saw mills were erected, the lands were drained and irrigated, farms were carefully tilled, tan yards, forges, oil mills, grain mills, fulling mills, and various hydraulic works were put in operation, cloth was woven, wool was spun, and the products not required for the use of the abbey were sold at Châtillon-sur-Seine, Bar-sur-Aube, &c. At the same time Clairvaux was a seat of learning, and was the abode, at different periods, of Pope Eugene III., 15 cardinals, and many other dignitaries. In 1153 there were 700 monks within the abbey walls, and 76 other monasteries were affiliated to this. In the 17th century it possessed nearly 50 villages, a vast number of farms, large vineyards, 60,000 acres of forest, 1,500 acres of fallow land, 4 metal forges and founderies, and an income of $120,000 a year. The number of its affiliated houses was 537, while the circuit of its walls exceeded that of the neighboring town of Chaumont. Its vast buildings have been converted into a prison (*maison centrale de détention*), where 2,000 convicts are employed in several trades, the proceeds of which defray the expenses of the establishment. It is one of the best regulated prisons in France. The abbey church, which contained the tombs of St. Bernard, and of several kings and princes, was torn down to make way for the prison yard.

CLAM, a common name for several species of bivalve shells. One of these, the largest of shells, has been already noticed in the article CHAMA; this, known as the giant clam, the *chama gigas* of Linnæus, and the *tridacna gigas* of Lamarck, is an edible species found among the sheltered lagoons of coral islands, and imbedded in the coral. The animal sometimes weighs 20 lbs., and with the valves over 500 lbs. Such are the valves of the specimen used for *bénitiers* in the church of St. Sulpice, Paris. Sir Joseph Banks possessed one which weighed, one valve 285, and the other 222 lbs. The shell is susceptible of a fine polish, and is carved by the Chinese into snuff bottles, tops of walking sticks, bangles (a kind of bracelet), and similar articles. Poets and sculptors have made it the cradle of the sea goddess. The common soft clam of the northern shores is the *mya arenaria;* the hard clam or quahaug is the *venus mercenaria;* and the broad sea clam is the *mactra gigantea*. The *unios*, *anadontas*, &c., of the brooks and rivers are often called fresh-water clams. The *mya arenaria*, by its abundance on the coast of New England, is of importance as an article of food, and is also largely used for bait in cod and haddock fishing. The shells are dug up from their beds, which are exposed at low water, where they are found lying about a foot below the surface, their siphon tube projecting upward in the hole by which they communicate with the water at high tide. They are taken out of the shells, or "shucked," and salted down in barrels. About 5,000 barrels are put up every year for the fisheries, and are valued at from $6 to $7 each. In the early history of the Plymouth colony clams and fish were several times the principal source of sustenance of the people. The devout elder Brewster, it is said, supported himself and his family upon them for many months without bread, thanking God that they could "suck of the abundance of the seas and of the treasures hid in the sands."

CLAN (Gaelic, *clan*, or *klaan;* Irish, *clann*, or *cland*, children), a tribe or family, the actual or assumed descendants from one common ancestry, united under the headship of a chief representing the common progenitor. The essentials of such a society are hereditary power in the chieftain, and community of name, if not of blood, among the members. Clanship exists at the present day among the mountaineers of the Caucasus. The institution was perhaps more fully developed in the Scottish highlands than elsewhere. The power of the chiefs of clans was, however, not well defined even there. The chiefs owned the land, and the tenantry held their farms under them. There was an intermediate class, known as tacksmen, between the common persons of the clan and the chiefs, being relatives of the latter. The rebellions of 1715 and 1745 caused the English government to abolish the hereditary jurisdiction of the chiefs, disarm the people, and compel them to adopt the lowland dress. The Scottish clans were Buchanan, Cameron, Campbell, Chisholm, Colquhoun, Cumming, Drummond, Farquharson, Ferguson, Forbes, Fraser, Gordon, Graham, Grant, Gun, Lamont, M'Allister, M'Donald, M'Donnell, M'Dougall, M'Farlane, M'Gregor, M'Intosh, M'Kay, M'Kenzie, M'Kinnon, M'Lachlan, M'Lean, M'Leod, M'Nab, M'Neil, M'Pherson, M'Quarrie, M'Rae, Munro, Menzies, Murray, Ogilvie, Oliphant, Robertson, Rose, Ross, Sinclair, Stewart, Sutherland.

CLANE, a barony, parish, and town in the co. of Kildare, Ireland. It stands on the river Liffey, here crossed by a bridge of 6 arches, and contains the ruins of an abbey founded in 548, and of a Franciscan priory of the 13th century.

CLANRICARDE, Ulick John de Burgh, marquis and earl of, a British nobleman, born Dec. 28, 1802, succeeded to the earldom, July 27, 1808. The female portion of the family are Roman Catholic, his mother, who died March 26, 1854, being of that persuasion. In youth he was remarkable as a keen sportsman, and was considered the best gentleman rider of his day. It was not until his marriage (April 4, 1825) with the daughter of the celebrated George Canning that he turned his attention to politics, being appointed by his father-in-law to
one or two subordinate political p
would probably have found far hig
had not a gambling transaction in w
concerned been dragged to light, throw
the opinion of the public, whether justly
a cloud over his name. After a few year
ever, it passed away, and Lord Clanricar
nominated to the embassy of St. Pete
under Lord Melbourne's government, and
return of the liberal party to power un
premiership of Lord John Russell, was
to the cabinet by that minister, with th
of postmaster-general, which he filled d
the dissolution of that government i
After that some transactions, in which hi
was injuriously mixed up with that of
Handcock, revived the old displeasure
public, and his appointment to the office
privy seal with a seat in the cabinet by L
merston, during the last few months of
ministration, which ended in March, 1858,
most marked reprobation. Lord Clanri
a fluent, but by no means a good speak
has extensive estates in the west of Ire
commands at present 2 parliamentary
for the county of Galway, filled by l
Sir Thomas Burke, and one for the
filled by his son, Lord Dunkellin, whic
considerably to his political importance.

CLAP, Thomas, an American clergy
at Scituate, Mass., June 26, 1703, die
Haven, Jan. 7, 1767. He was settled as
ister at Windham, Conn., in 1727, and
was elected president of Yale colleg
contributed much to improve Yale col
was the means of building a college
chapel. He was a man of extensive er
and gave great attention to mathe
astronomy, and constructed the first orre
in this country. He published a history
college, and other writings, and had ma
lections for a history of Connecticut; b
of his manuscripts were plundered in
dition against New Haven, under Gen.
He had a controversy with President E
respecting Whitefield, and opposed the
not so much upon religious grounds as
misapprehension of Whitefield's designs.

CLAPBOARDS, also called weather
ing, strips of board of various widths,
inch thick at one edge, and sharp at the
They are much used in the northern
an outside covering for houses, being
the sides as shingles are laid on the ro
machinery by which they are cut from
is very ingenious, and some machines
troduced are said to be still more pe
those before in use. As made by the
white pine log, first cut to the proper
a circular saw, was turned down to a tru
der of the right diameter in a lathe.
next put upon a frame and carried by ma
against a circular saw, which cut it throug
end to end nearly to the centre only
frame then, without further attention, ra
over the saw, this continuing to revolve

through, the log turned
ence passing just the
of the clapboard. It
for the saw cutting
the movements con-
ed until the log was cut en-
the thick edges of which
e, and the sharp ones met
gutly attached to the cylin-
held them all together, so that
oved in one piece, and set

ORE, an American clergyman,
Mass., March 29, 1792.
e college in 1814, pursued
for 3 years at Andover,
pastor of the first Presby-
New Orleans. In 1834 he
an views of Christianity, and
ction with the Presbyterian
ued pastor of nearly the same
before, organized under the
rch of the Messiah. He has
Orleans through 20 fatal and
epidemics, including yellow fe-
and by his laborious devotion
s during those periods of
earned the esteem and af-
own parishioners, and of the
estant and Catholic inhabit-
guished also as an able and
A wealthy Jewish gentle-
furnished him a large church
e, and he himself for many
the renting and manage-
847 he travelled in Europe, in
his pastorate on account of
1858 he published a volume of
cal Sketches and Recollections"
ence in New Orleans.

W., jr., an American jour-
Boston in 1826, completed his
2 years' residence in Europe. In
ded his father as editor and pro-
Boston "Saturday Evening Ga-
l established in 1814. In addi-
nary duties of an editor, Mr.
a few years published "A
oston Stage," and a history of
ht infantry, containing much mat-
ature of great interest. Mr. Clapp
ontributor to dramatic literature.

TON, Hugh, an African traveler,
n the co. of Dumfries, Scotland,
ar Saccatoo, in Africa, April 13,
ced a strong taste for mathematics
age, and had made considerable
at the age of 13 he was appren-
master trading between Liverpool
k, with whom he made a number
for an accidental violation of the
was sent on board a man-of-war,
speedily promoted to the rank of
He ved on the American lakes
wi Great Britain in 1812–'14,
d to the rank of lieutenant and placed in command of a schooner. He returned to Scotland in 1817, and remained on half pay till 1822, when, having become interested in Dr. Oudney's proposed exploration of the interior of Africa, he was chosen to accompany that gentleman and Lieut. Denham in the expedition. It was the design of the explorers to go first to Bornoo, where Dr. Oudney was to remain as British consul, and from thence to make explorations E. and W. The expedition started from Moorzook, Nov. 29, 1822, and reached Lake Tchad in the kingdom of Bornoo in safety, on Feb. 4, 1823. The distance was 800 m. Six days after entering the capital, Kooka, Clapperton and Dr. Oudney set out for Saccatoo, the capital of Hoossa, more than 700 m. W. of Kooka. The journey was a long and disastrous one, occupying 90 days, and accompanied by many privations. When they had accomplished about ½ of the distance Dr. Oudney died, after a brief illness. Clapperton struggled forward and reached his destination, but was not suffered to proceed further westward, and after a short stay returned to Kooka, whence he proceeded in company with Denham to Tripoli, and thence to England. Within 6 months after his return, he was raised to the rank of captain, equipped with the necessary men and goods for trading, and sailed for Badagy in the Bight of Benin. Arriving there, Dec. 7, 1825, he journeyed N. E. toward Saccatoo. Two of his companions, Capt. Pearce and Dr. Morrison, fell victims to the fatal climate within a short distance of the coast; still Clapperton, accompanied by his faithful servant, Richard Lander, pressed on. At Katunga they approached the N. branch of the Niger, the Kawam or Joliba, and crossed it without knowing that it was the stream of which they were in search. Proceeding N., they reached Kano, a considerable town, from which proceeding W. they arrived again at Saccatoo. Here he was detained for more than a year by the jealousy of the native king, and the intrigues of the pasha of Tripoli. At length, wearied with the delay so irksome to his active spirit, the deadly climate began to tell upon his vigorous constitution, and he fell a victim to dysentery.

CLARAC, Charles Othon Frédéric Jean Baptiste, count, a French antiquary and artist, born in Paris, June 16, 1777, died in 1847. Having emigrated with his family, he served for some time in the army of the prince of Condé, and afterward entered a Russian regiment; but his leisure hours were devoted to the study of natural philosophy and the fine arts. Availing himself of the amnesty granted under the consulate, he returned to France, and being chosen tutor to the children of King Murat, he repaired to Naples in 1808. During his stay there he superintended the excavations at Pompeii, the results of which he described in his book, *Fouilles faites à Pompéi.* On the downfall of Murat he returned to France, but soon left it to follow the duke of Luxembourg in his embassy to Brazil. On his return to Paris he was appointed successor to Visconti, as keeper of the *musée des antiques.* He published a catalogue of the *musée du Louvre*, and a *Manuel de l'histoire de l'art;* but his best work is the *Musée de sculpture antique et moderne*, 1826–'52, completed after his death, to which he devoted his fortune.

CLARE, a central co. of the southern peninsula of Mich., drained by Maskegon and Assemoqua rivers and their branches; area about 650 sq. m. The surface is mostly covered with forests, and diversified with many small lakes. The county has been recently formed, and has few inhabitants. It is not included in the last census (1850).

CLARE, a county in the west of Ireland, province of Munster; area, 768,265 acres, about ¾ of which are under cultivation; pop. 212,428. It has an extensive coast line, and is rich in natural resources. Its mineral deposits are numerous—ironstone, coal, iron ore, lead, copper pyrites, manganese, black marble, slate and flag quarries, and sand. Although deficient in water, and with a rugged surface, there is abundance of pasturage among the hills, while on the banks of the Shannon, which forms its southern boundary, and other spots, in which surface waters occasionally collect, there is much fine soil. Corn and provisions are the staple products, and coarse linens and woollens are made for home use. There are several ancient memorials in Clare—round towers, the abbey built by Turlogh O'Brien in 1306 at Ennis, and the abbey of Quin, built of black marble, in the 13th century, beside other and numerous remains of interest.

CLARE, or Clare Castle, a town in the co. of Clare, Ireland, situated on the Fergus, 2 m. S. of Ennis; pop. 879. The river, here crossed by a stone bridge, is navigable by vessels of 300 tons; but the commercial advantages which the town possesses as the port of all the central part of the county are nearly counterbalanced by the poorness of its harbor. In 1845, however, it exported corn, meal, flour, &c., to the value of £16,617. It has no manufactures, and is inhabited mostly by fishermen and farm laborers. About 1 m. S. of the town are the ruins of Clare abbey, founded by O'Brien, king of Munster, in the 12th century.

CLARE, or Clara, an island off the W. coast of Ireland, at the entrance of Clew bay. It belongs to the co. of Mayo, Connaught, is about 4½ m. long, and 2 m. broad. At its northern point the land rises to a height of 487 feet, and elsewhere attains an elevation of 1,520 feet above the sea.

CLARE, John, an English poet, born at Helpstone, July 13, 1793. He was the son of a poor farmer, who had become a cripple, and was supported by the charities of the parish. He managed, by saving a penny whenever it was possible, and by doing extra work, to pay for a little schooling, and at the age of 13 years, meeting, through one of his companions, with Thomson's "Seasons," he determined to own a copy. The shilling was at last saved, and he walked one morning 6 miles to the neighboring village, waited an hour for the stores to be opened, and returned with his precious purchase. He had soon composed, during his walks and labors, two short descriptive poems, the "Morning Walk" and the "Evening Walk." In 1817 he resolved to publish a small volume, and by working day and night, saved £1 to pay for printing a prospectus. The "Collection of Original Trifles" was announced, at a price not to exceed 3*s.* 6*d.*; but as he could not distribute his papers into higher circles than his own acquaintance, only 7 subscribers were obtained. One copy of his prospectus, however, fell into the hands of a London publisher, the final result of which was the sale of his poems for £20. The volume appeared in 1820, with a brief biographical introduction, and bearing the title of "Poems Descriptive of Rural Life and Scenery," and was received with general favor by the public and the reviews. In a short time Clare was in the midst of wealth. Numerous gifts of from £10 to £100, and annuities of similar amounts, had been bestowed upon him. He married the daughter of a neighboring farmer, first, however, celebrating her in several small poems. He published in 1821 two other volumes of poetry, which were superior to his first, and contained some poems of rare beauty. He often described with peculiar force the impression made upon the mind by the sight of lovely objects in nature. His prosperity did not continue long after this. He speculated with his money and lost it, and amid increasing difficulties sank into a state of despair and mild lunacy. He has been for many years in a private asylum, allowed to wander about at will, but wholly lost to the world.

CLARENCE STRAIT, the channel between Melville island and the N. W. coast of Australia, connecting Van Diemen's gulf with the Indian ocean. It is about 12 m. wide at the narrowest part, and contains a number of islets, rocks, and reefs, between which the current runs with great rapidity.

CLARENCEUX, in Great Britain, the 2d provincial king-at-arms, so called, probably, from the duke of Clarence, whose herald was appointed to this office by his brother, Henry V. It afterward declined into the office of herald only, but was revived by Edward IV., who gave the title, and the west of England as a province, to William Hawkeslow. The duty of this officer at present is to marshal and dispose the funerals of all baronets, knights, and esquires on the south of the river Trent.

CLARENDON, Earl of (Edward Hyde), a British statesman and historian, born at Dinton, Wiltshire, Feb. 18, 1609, died in Rouen, France, Dec. 9, 1674. His family belonged to the English gentry, and had for several centuries been settled in Cheshire. Instructed by his father and the vicar of the parish, he was sent to Oxford in 1622, and was admitted at Magdalen hall. He was made bachelor of arts in 1626, and left Oxford. He had been intended church, but his destination was changed uence of the death of his elder brother, was entered in the Middle Temple, of his uncle, Sir N. Hyde, was treasurer. lies were more miscellaneous than legal, associated much with loose characters. not show application until after his with Anne Ayliffe, in 1629, a union d only 6 months. In 1632 he married Aylesbury. The deaths of his father had a grave effect on his character, d himself to professional labors, ing literature or politics. Among s were Ben Jonson, Selden, Carew, Kenelm Digby, Hales, Chillingworth, ldon. He knew several distinguished en who figured in the great contest then at hand; and his most intimate friend was ous Lord Falkland. Among his profes- riends were Lane, Maynard, and White- Circumstances of a professional char- rought him the acquaintance of Laud, most powerful member of the govern- nd by that most zealous of churchmen h assisted. In return, Hyde was of nce to the archbishop. He was member of the short parliament, net April 13, 1640, sitting for Wootton- having been also chosen for Shaftesbury. the government side, though moderately, brought into collision with Hampden. day the parliament was dissolved by a measure to which Hyde was op- y remonstrating with Laud on the ne was an advocate of practical re- l had the policy which he indicated ued, there can be little doubt that the throne would have remained in posses- the house of Stuart. Hyde was chosen tash to serve in the long parliament, er, 1640. In the first proceedings of lebrated body he was as conspicuous a r as either Pym or Hampden. He led in the abolition of some of those arbi- ibunals by the use of which the Stuarts eking to make of England a monarchy e fashion of France, the earl marshal's nd the council of York especially. part in the proceedings against the who had been concerned in the ship- business, and in the impeachment of eeper Finch, distinguishing himself par- y in the latter transaction. He was not inently concerned in the proceedings Strafford, but yet was active in them. certain whether he voted for the bill of r which brought that great criminal to fold. In the summer of 1641 Hyde sep- himself from the reformers, though in- s of his intention to do so were afforded earlier date. He broke with them on questions, and his decision was appa- hastened by his discovery of the republi- nings of some of their chiefs. He at- the king's attention, and they had an w just before Charles made a visit to Scotland. From that time dates his connection with the Stuarts, in forming which Hyde acted from principle and disinterestedly. He belonged to that numerous and respectable portion of Englishmen who believed the parliament had gone far enough, but who were as much opposed to arbitrary power as St. John and Vane; men whose advice, had he been governed by it, would have saved Charles I.'s throne and life. The most determined friend of constitutional government must admit that the house of commons was beginning to evince an arbitrary disposition on some points, while the utter faithlessness of the king was unknown to the world. A reaction had commenced, and had Charles known how to profit from it—had he been governed by the advice of Hyde, Colepepper, and Falkland—the troubles of the nation would have then come to an end. The occurrence of the Irish rebellion, and other circumstances, were sufficient to set the popular tide in favor of the parliament again, when the bringing forward of the "grand remonstrance," in which all the king's crimes and errors were clearly set forth, led to a pitched battle, the result of which showed that the reformers were carrying matters too far, as they triumphed by only 11 majority. Hyde was very conspicuous in opposition, and narrowly escaped being sent to the tower. The king's answer to the remonstrance was written by Hyde, and is an able state paper. Sensible of Hyde's talents, the king determined to associate him with Falkland and Colepepper as his chief ministers and advisers. He refused to accept office, but the three constitutional royalists were to meet often, and to consult on the king's affairs, and to conduct them in parliament, the monarch asking their advice, and solemnly pledging himself to take no step in parliament without that advice—a pledge which he kept after his usual fashion. All three were of service to him, meeting every night, generally at Hyde's house, he doing all the writing that was necessary, and corresponding with the king. The suspicions of the other party were directed to him, but this could not have proved injurious if the king had acted with common honesty. In violation of his pledge to Hyde and his associates, as well as in violation of law, he endeavored to seize "the five members," an act that not only made civil war inevitable, but set the country once more against the king. Hyde says they were absolute strangers to the royal counsels, and detested them. Still he remained the royal adviser, and aided the king with his pen. He opposed the bill to remove the bishops from the house of peers. In the dispute between the king and parliament respecting the militia, Hyde was the author of the ablest royal papers, and also wrote other papers for his master. They were all written in a constitutional spirit, and had Charles triumphed he would have disregarded them all. The king had left London, and he summoned Hyde to York, to the vicinity of which he went in May, 1642. The war began three months later but negotiations were commenced for an accommodation, and Hyde's services were put in requisition. In 1643 he was made chancellor of the exchequer, knighted, and sworn of the privy council. On the death of Falkland the king offered to make him secretary of state, but he declined the appointment. It was by his advice that parliament was summoned to meet at Oxford, which comprised large numbers of both houses. He was one of the royal commissioners who met the parliamentary commissioners at Uxbridge, the burden of the work on his side falling on Sir Edward's shoulders. The negotiations failed. When the king appointed Prince Charles head of the western association, Sir Edward was made a member of the prince's council, and saw the king for the last time March 5, 1645. During the miserable proceedings in the west he bore himself well, and attended the prince, first to Scilly, and then to Jersey. In the latter island he remained over 2 years, and long after the prince had left it. In his correspondence he condemned the king's duplicity, as proved by the circumstances of Glamorgan's treaty. He commenced his "History of the Rebellion" while at Scilly, in March, 1646, and labored very diligently on it in Jersey. He applied, though in most instances with but indifferent success, to living actors in the great drama, for materials and assistance. He worked hard, spending 10 hours a day on his books and papers. He joined Prince Charles in Holland in the summer of 1648, and had some part in the intrigues of his quarrelsome court. The next year he was sent minister to Spain, in company with Lord Cottington. His mission proved a failure, and he left that country in 1651, taking up his residence at Antwerp. He joined Charles II. at Paris at the close of the year, and was intrusted with the management of his affairs. This brought him much unpopularity, and the exiled court was the scene of the worst intrigues. He suffered the extremes of poverty, and speaks in his correspondence of his lack of money, clothes, and fuel. The queen mother was his bitter enemy, and sought, with the aid of the courtiers, to ruin him, but without success. He was concerned in the plots against Cromwell's government, and listened to projects for the protector's assassination. He accompanied the vagrant court in all its wanderings, and was made lord chancellor in 1657. When it became apparent that a restoration was approaching, he favored moderate counsels. Two days after the entrance of the king into London, Hyde took the seat of speaker of the house of lords, and sat in the court of chancery. It was vainly attempted to exclude him from power, and he became head of the administration. He was made Baron Hyde, Viscount Cornbury, and earl of Clarendon, and refused the garter. He wished to keep faith with the roundheads, but the current ran too strongly against all who had opposed the royal power for even the king to maintain his faith. Clarendon sought to govern constitutionally,

but in the spirit of a departed age.
were pure, and the king was one
profligate of mankind. He offende
try party by his arbitrary ideas, an
by his austerity. His position in the
made him responsible for acts whi
approve; and the sale of Dunkirk
caused him much unpopularity, th
risively applying the name of D
to the magnificent mansion which
in London. His taste led him to f
did gallery of paintings, many of w
accused of extorting from necessito
The marriage of his daughter An
duke of York, heir presumptive t
—to which he was not a party, and
which he bore himself with unspea
ness,—angered the nobility, and la
to grave suspicions with the ignoran
the people. Without being corr
greedy of money, which he ex
most ostentatious manner. By
his unpopularity was at its height.
changed the name of his palace
house, because of their suspicion
been bribed by the Dutch; and
Tangier hall, as he was charged
taken money to assent to the ho
African town, which was an item
of Catharine of Braganza. The d
Dutch war were laid to his charge
had been opposed to the contest.
rence of the great plague, and th
with "hard times" generally, tend
his unpopularity. The populace br
dows, cut down his trees, and pain
on the gate of his house. He was
virtues by the king and his mistre
cavaliers, because he had upheld
indemnity; and by the dissenters,
had promoted the act of uniformity.
olics were included among his enemi
opposed the dispensing power. T
lords were offended by his showing
constitutional privileges of the con
the house of commons believed he w
posed to the very existence of parlia
advised the dissolution of the parl
existing. There was a complete a
him of all the harlotry and nearly
in England. The king, who always
tremes, recommended him to surren
seal; advice which he refused to
his reply in language which could
offensive. Four days later (Aug.
was forced to surrender the seal; bu
satisfy his enemies, who, on the meet
ment, proceeded to extremities aga
couraged by a reflection on him that
the king's speech. It was then pro
ceed against him by impeachment
the lords refused to arrest him un
cific charge were made. Finally
was induced to retire to France, wh
liament passed a bill of banishm
vindication was burned by the

by a b of
for 7
was devoted to
his "History of the
a work on the Psalms
ed when in his
," an "Answer" to
" a large number of essays
religious subjects, a
on al Power," &c. He
, and owed his
to skill with
form al-
they an exten-
jects. His "H y of the Re-
of the most able works in
of modern and it proves
is the con opinion that
works, proceeding from actors in
bed, are necessarily more accu-
which are written by others.
errors of omission and commission.
made. Indeed, Clarendon wr
" or "vi ication" of the ro
a h of the contest
opponents. Yet it
work, a classic; and, to the
author's descen g-
of its
n of
city of ex-
h it freq devel-
of char-
the warm ited ad-
."—
and
queens Clar-
and has been
of his descend-
literary reputa-
," other autobiographical
not to be trusted, and are inferior
interest to the "History of the Re-
which is a perfect portrait gallery, in
we see, as it were, the minds of the men
andyke painted. It was not until more
years after Clarendon's death that
" and "Life" were published in a
for which we are indebted to the
ndinel.

CLAR ON (GEORGE WILLIAM FREDERICK
of, and Baron Hyde of Hindon,
an, chancellor of the queen's
nd, a descendant of the pre-
the male line, born Jan. 12, 1800.
appointment was as commissioner
in Ireland. In 1833 he was ap-
Lord Grey's government envoy
and minister plenipotentiary to
filled this post, at that time one of
and difficulty, in a manner highly
to himself and acceptable to the con-
party in Spain, which was in a state
and civil war during the first years
n. The success with which Mr. Villiers had conducted the negotiation of a treaty for the effectual suppression of the slave trade, and the manner in which he had performed his other official duties, were warmly eulogized by Lord Palmerston, in his speech on the foreign affairs of the country in April, 1837. On this occasion Lord Palmerston observed: "I am bound to say, that the respect which Spain has for this country is very much owing to the able and judicious conduct of the representative of the British government at Madrid." On the decease of his uncle, the 3d earl, he succeeded to the peerage, Dec. 20, 1838, and returning to England in 1839 he took his seat in the house of lords as earl of Clarendon. He was soon called to vindicate the policy of the ministry by which he had been employed, and his own conduct as their representative in Spain, against the attacks of the marquis of Londonderry, a champion of the Carlist faction. His defence of the Spanish character and the policy of the constitutional party in Spain was so acceptable in that country, that a gold medal was struck in his honor. In 1839 Lord Clarendon became a member of the Melbourne government as lord privy seal, and in 1840 he was made chancellor of the duchy of Lancaster. He retired from the ministry on Sir Robert Peel's accession to power in 1841, but supported all the liberal measures of his government. When the repeal of the corn laws was brought forward in 1846, Lord Clarendon made an able speech in its support. On the change of administration, and the accession of Lord John Russell to power in 1847, Lord Clarendon was appointed president of the board of trade, which office he filled until the death of the earl of Bessborough, May 16, 1847, who had been appointed lord lieutenant of Ireland under the same administration, when he was transferred to that office. He was at first extremely popular. His situation, however, soon became one of embarrassment. The distress produced by the famine was severe, and the measures for its mitigation adopted by the imperial parliament were attended with very limited success. Nothing within the power of the executive was neglected by Lord Clarendon. The short-lived rebellion of Smith O'Brien followed. It was subdued with the smallest possible amount of bloodshed; but Lord Clarendon's popularity with both parties was impaired. The disaffected looked upon him with aversion, as the agent of an odious government, and the Orange faction were disgusted with his mildness. He experienced the too common fate of moderate counsels, in alienating both extremes of party. His conduct was not only unpopular with both factions in Ireland, but was severely denounced by Lord Stanley (afterward earl of Derby) in the house of lords. Lord Clarendon, on this occasion, left his government in Ireland, and appearing in his seat in parliament, vindicated his conduct. On the formation of the first Derby ministry in 1852, Lord Clarendon was superseded by Lord Eglinton in the government of Ireland. Under Lord Aberdeen's premiership,

the department of foreign affairs, after it was resigned by Lord John Russell, was intrusted to Lord Clarendon (1853). It was conducted by him with acknowledged ability. Of all Lord Aberdeen's ministry, he retained perhaps the greatest share of the public favor, and remained in office on Lord Palmerston's accession to power. The important negotiations relative to the Crimean war and the adjustment of the balance of Europe at its close were carried on by Lord Clarendon with marked, though not ostentatious, vigor, and in a conciliatory spirit. He signed the treaty of alliance between Great Britain and France (April 10, 1854); remained at his post during the ministerial crisis of Feb. 1855; had an interview with Napoleon III. at Boulogne (March 8) on occasion of the death of the emperor Nicholas; took a prominent part in the peace conference at Paris, when he came forward as a champion of the liberal institutions of Belgium, and signed the treaties of Paris of March 30 and April 15, 1855. He was less fortunate in conducting the relations of England with the United States. The negotiations relative to Central America and the enlistment question produced a temporary coldness toward the government of the United States, and the dismissal of Mr. (now Sir Philip) Crampton, the British minister at Washington. Lord Clarendon continued to administer the foreign office till the earl of Derby effected his return to power in 1858, when he was succeeded by the earl of Malmesbury.—Lord Clarendon is a person of the most amiable manners, indefatigable industry, and cultivated mind. He married, June 4, 1839, Lady Katharine Grimston, eldest daughter of James Walter, 1st earl of Verulam, and widow of John Forster Barham, esq. The prospective heir to the title is Edward, Lord Hyde, born Feb. 11, 1846.

CLARENDON PARK, an extra-parochial liberty and anciently a royal forest of Wiltshire, England. In a royal palace or hunting seat here, some traces of which yet remain, Henry II. held the council which enacted, in 1194, the celebrated constitutions of Clarendon, aimed to repress the power and privileges of the clergy. It gave the title of earl to Lord Chancellor Hyde. The earldom now belongs to the Villiers family.

CLARENS, a village of Switzerland, on the lake of Geneva. It commands a fine view of the lake and of the mountains on the opposite shore, and is immortalized by the writings of Rousseau.

CLARET. See Bordeaux Wines.

CLARIFICATION, the process of purifying and cleansing liquids from feculent substances. In some instances this may be accomplished by filtration, but the term is usually applied to the mode of separating the impurities by the addition of some coagulable substance, which seizes upon and unites the suspended particles, in a scum or sediment which may be easily removed from the clear liquid. The common materials for this purpose are the white of eggs and blood, used for hot solutions, and isinglass particularly for liquids that are clarified in a cold
state. The latter is much employed i
wines. Bone black as well as blood i
ed by the sugar refiners to decolor
The mucus contained in oils requi
aration the addition of diluted sulph
by which it is charred and reduced t
mass, which separates as a sediment.
purities of train oil, which are not mu
mal gelatine and volatile fetid matter
arated by a solution of tannin, with w
form insoluble flakes. Blue vitriol or
lead is used for the same purpose.

CLARIGATION, in Roman an
ceremony of declaring and commen
the priests called *fetiales*. The *fet*
the hostile people, called the gods t
that his claims were just, and returned
If within 30 days redress was not
returned to the enemy, made formal u
of war, and hurled across the boun
their territory a spear barbed with i
red by fire, and smeared with blood.

CLARINET, a musical wind i
wood, played through a reed, with
keys for the fingers. Its compass ext
E below the F clef to about 3 octav
although its powers are not equal th
It is heard to best advantage in the
and F, in which most of the music
written. Its invention is ascribed t
Christoph Denner, of Leipsic, who die

CLARION, a N. W. co. of Penn.;
sq. m.; pop. 23,565. It is bounded
W. by Alleghany river, which is here
by steamboats, and intersected by the
from which it is named. The soil is
the surface either undulating or hilly.
nous coal, iron, and limestone are fou
county, and timber of various kinds
dant. The productions in 1850 were
bushels of wheat, 111,534 of corn, 27
oats, 17,086 tons of hay, and 422,0
butter. There were 27 iron furnaces,
eries, 34 flour and grist mills, a large
of factories, 2 newspaper establi
churches, and 5,961 pupils atten
schools. Capital, Clarion.

CLARK. I. A S. W. central county
area, 941 sq. m.; pop. in 1854, 5,145.
1,228 were slaves. The Washita ri
its E. border, and the Little Missour
on the S. W.; the former is navigable
boats. Productions in 1854. 164,562
of corn, 5,863 of oats, and 2,371 bales
Capital, Arkadelphia. II. An E. co
area, 460 sq. m.; pop. in 1855, 13,
borders on Ind., and is bounded S. E
Wabash river, here navigable by ste
Stone coal is found near its banks.
tracts of forest and prairie land occupy
face, and the soil, much of which is de
grazing purposes, is quite fertile. The
tions in 1850 were 431,490 bushels of c
350 of wheat, 79,928 of oats, and 85,01
butter. There were 8 churches, and 2
pils attending public schools. Capital,

from Illinois by the Mississippi river,
Iowa by the Des Moines. It has a
ıeven surface, intersected by Fox and
rivers, and occupied chiefly by fer-
tensive prairies, interspersed with
good timber. In 1850 the produc-
820,970 bushels of corn, 48,936 of
,896 of oats, and 2,023 tons of hay.
e 6 churches, and 1,246 pupils attend-
schools. The county was named in
en. William Clark. The growth of the
r several past has been exceedingly
l, Alexandria. IV. A S. W. co.
a territory, area about 3,000 sq. m.,
the Columbia river, which forms
W. boundary, Cascade range, which
on the E., and Calama river, which
. and N. W. border. In its E. part
mountain called St. Helen's. Very
land is yet improved. In 1850 the
were 1,050 bushels of wheat, 900
5,550 of potatoes. The county
church and 643 inhabitants. V. An
co. of Ky.; area, 210 sq. m.; pop. in
88, of whom 4,840 were slaves. It is
the S. by Kentucky and Red rivers,
he former is navigable, and the latter
good water power. The surface is hilly
, and much of the soil exceedingly fer-
raulic limestone is the principal rock.
in 1850, 1,213,007 bushels of corn,
409 tons of hay, and 58,164 lbs.
umber of pupils in the public
. The county was formed in 1793,
in honor of Gen. George Rogers
ital, Winchester.

, ABRAHAM, one of the signers of
ation of independence, born at Eliza-
N. J., Feb. 15, 1726, died at Rahway,
state, from a stroke of the sun, in
of 1794. Having received an ex-
ucation, particularly in mathematics
aw, and being of a feeble constitution
itted him for attending to his paternal
e the occupations of surveying and
He soon acquired considerable
the law, and, though he never
e ranks of the profession, he was fre-
alled "the poor man's counsellor,"
readiness and ability which he showed
ng advice gratuitously. He held sev-
rtant local offices under the colonial
but upon the first appearance of exception of the session of 1779, until Nov. 1783. In 1788, he again took his seat in the national legislature. He was one of the commissioners in the convention which met at Annapolis, Sept. 11, 1786, for the purpose of reporting a uniform system of commercial intercourse and regulations, for ratification by the several states; and, on May 8 in the following year, he was appointed by the council and assembly of New Jersey one of the commissioners to represent that state in the convention which framed the federal constitution. Ill health prevented his attendance at the sessions of that illustrious assembly, but in 1790 he was elected a member of the 2d congress, and retained his seat until a short time before his death. His remains rest in the cemetery at Rahway, N. J., the citizens of which village erected a handsome marble monument to his memory on July 4, 1848.

CLARK, ALVAN, the first American who manufactured large achromatic object glasses, born in Ashfield, Mass., March 8, 1804. A farmer's boy, his self-taught skill gave him, at the age of 22, the situation of a calico engraver at Lowell. After 9 years' employment in this business at various places, he became a successful portrait painter in Boston, and still continues to practise this art. When over 40 years of age he became interested in telescopes, and, assisted by his sons, has been very successful in producing instruments of great accuracy. No. 9 of vol. xvii. of the "Proceedings of the Royal Astronomical Society" of London contains a list of discoveries made by Mr. Clark with telescopes of his own manufacture. Four of his glasses are in England, and two more have been ordered. Mr. Clark is also the inventor of a double eyepiece, an ingenious and valuable method of measuring small celestial arcs, from 8′ to 60′.

CLARK, DAVIS W., an American clergyman, born on the island of Mt. Desert, Me. Having passed through the preparatory course at the Maine Wesleyan seminary, he entered the Wesleyan university in 1834, and was graduated in 1836. He was then called to preside over Amenia seminary, N. Y., where he remained 7 years. So reluctant were the trustees to release him, when he proposed to enter upon the more immediate duties of the ministry, that they declined to accept his resignation, and referred the matter to the annual conference, which utor to the "Methodist Quarterly Review." He has beside produced a "Treatise on Mental Discipline," "Death-bed Scenes," and "Life and Times of Bishop Hedding." More than 20 books have been edited by him and published by the book concern. He has also been actively engaged in the duties of the pulpit.

CLARK, George Rogers, an American revolutionary officer, born in 1742, died near Louisville, Ky., Feb. 13, 1808, or according to others, in 1817. He passed his boyhood on the western frontier of Virginia, and after the massacre at Wyoming, in 1778, commanded a body of troops against the Indians. The depredations of the savages being encouraged by the British, he advanced to the Mississippi, surprised Kaskaskia and 3 other British posts on that river, captured the British governor and garrison of Detroit, intercepted a convoy of goods valued at $10,000, and built Fort Jefferson on the W. bank of the Mississippi. He marched with Steuben against Arnold when the latter invaded Virginia in 1780, and was appointed general in 1781. After the conclusion of peace he retired to Kentucky.

CLARK, Sir James, an English physician, born at Cullen, Banffshire, in Dec. 1788, studied medicine at Edinburgh, and received his degree in 1817, after which he travelled in France, Switzerland, and Italy, studying the sanitary institutions of those countries. Returning to Edinburgh, he obtained a reputation as one of the most skilful physicians of that capital, especially in diseases of the lungs. He afterward settled in London, and became physician-in-chief of St. George's hospital, and consulting physician of the king, the queen of the Belgians, the duchess of Kent, and the princess Victoria. On the accession of Victoria to the throne, he was selected to be her physician in attendance, and received the title of baronet. Severely blamed for his part in the affair of Lady Flora Hastings in 1839, he was yet able to justify himself. He has published "Medical Notes," made during his travels (1820); a work on the "Sanative Influence of Climate" (1829; 4th edition, 1856); and a "Treatise on Pulmonary Consumption" (1835).

CLARK, Jonas, an American clergyman, born at Newton, Mass., Dec. 25, 1730, died Nov. 15, 1805. He officiated as pastor at Lexington, Mass., and it was only a few rods from his own door that the first blood was shed in the revolutionary struggle, April 19, 1775. He published a sermon on the first anniversary of the battle, 1776. He was an ardent patriot, and as a preacher was distinguished for his fervor.

CLARK, Louis Gaylord, an American editor, born at Otisco, Onondaga co., N. Y., in 1810. He and his twin brother, Willis Gaylord, were chiefly educated by their father. In 1834, L. G. Clark assumed the editorship of the "Knickerbocker Magazine," which had been commenced in Dec. 1832, by Mr. C. F. Hoffman, from whom it passed for a short time into the hands of the Rev. Timothy Flint. During the
whole 25 years of Mr. Clark's editor
doubtful whether he has ever made a
In that long period, he has become a
personally or by correspondence, with
eminent writers in his own country a
Britain, who have largely contribut
magazine. Indeed, not even "Black
its much more extended career, can
such a brilliant array of literary con
Many an author, now deservedly emi
made his debut in the "Knickerbocker"
encouragement from its good-nature
Mr. Clark's own contributions, called
itor's Table," and "Gossip with Rea
Correspondents," exhibit a lively sen
humorous, a gentle appreciation of the
much knowledge of men and books, a
bounded geniality, which expresses its
sionally in quaint but always in gra
guage. In 1852, "Knick-Knacks from a
Table," selected from the magazine, ap
a handsome volume, and won extend
larity. Mr. Clark had previously pu
selection of papers, by Washington Ir
other authors, called "The Knick
Sketches." In 1855, the leading Amer
tributors to his magazine published a l
octavo volume, illustrated with their
and consisting wholly of their origin
butions, called "The Knickerbocker
The design was to purchase a cottage
for Mr. Clark, at Piermont, on the
where he has lived during the last
surrounded by his interesting famil
LIS GAYLORD, an American author,
1810, died June 12, 1841, twin broth
preceding, was educated with him at h
showed considerable poetic talent wh
his teens. At the age of 20 he went
delphia to conduct a weekly literary
which was soon discontinued. Soon
became associate editor of the "C
Star," a religious and literary paper.
1833, he recited his longest poem, "
of Life," before the Franklin society
university. In 1836 he married
cleugh of Philadelphia, and her early
consumption, saddened his mind
brief remainder of his own life. He
early age of 31, also of consumption.
years before his death he had been p
and efficient editor of the "Philadel
zette." A collection of his poems was
during his lifetime. A complete ed
published in 1847, under his brother's
sion. In 1844 an octavo volume of h
remains was given to the world. Ha
was occupied with "Ollapodiana," a
very original, racy, and fanciful pape
had appeared in the "Knickerbock
month to month, during several years.
mainder of the volume contained tal
and humorous articles which had p
appeared in the magazine, with "The
Life," and a number of minor poems.
ference between this author's prose

ble. His prose, for the most part,
d rollicking, with a strong dash of
, while his poems are generally sub-
ncholy, and graceful, with a deep
of religious feeling; they are
not gloomy. There is scarcely a
n all he wrote, and he so rarely
rs of rhythm, that his musical or-
have been excellent. The bro-
y be mentioned as examples of
gifted men of letters.
on, benefactor of Yale college,
Conn., Jan. 31, 1785, died there,
40. He spent some time under the
Dwight, but did not receive
education. He became a farm-
placed at the disposal of Yale
to be invested at compound in-
ould amount to $20,000, for the
a professorship. On this
pro orship of moral philosophy
ysics was established in 1848. He
similar scheme for the establish-
olarships. Another benefaction
for the purpose of procuring a
When Mr. Clark died, he left
idue of his estate, to the college.
LLIAM, an American general, born
1, 1770, died in St. Louis, Mo.,
e was the youngest of 6 bro-
ldest of whom served with distinc-
revolutionary war. One of them
battle-field; another was killed by
n the Wabash, and another of
Gen. George Rogers Clark.
removed with his family to
they located at the falls of the
ent site of the city of Louisville.
was then, and for many years after,
quent and deadly incursions of the
wn as "the dark and bloody ground,"
dangers and privations of this border
Clark family largely participated.
was early inducted into the mys-
n warfare, and at the age of 18 he
ensign, and went into active ser-
h 7, 1792, we find him a lieuten-
Appointed adjutant and quar-
ept. 1793, he served till July, 1796,
as obliged to resign on account of ill
e same year he visited St. Louis,
n after took up his residence, and
tendered by President Jefferson
ent of 2d lieutenant of artillery, to
connection with Capt. Meriwether
command of an exploring expedition
Rocky mountains to the mouth of the
which left St. Louis in March, 1804.
ilous expedition, through a country
hostile and ferocious tribes of In-
k was the principal military direct-
also rendered material assistance
wis in the scientific arrangements.
is consummate knowledge of Indian
manners that the expedition owed
He was promoted to the rank of
1st lieutenant in Jan. 1806. The nomination of lieutenant-colonel, offered him by the government, was negatived by the U. S. senate, and resigning, Feb. 27, 1807, he officiated as Indian agent till he was appointed by congress brigadier-general for the territory of Upper Louisiana. During the war of 1812 he was offered the rank of brigadier-general in the army, and the command then held by Gen. Hull, but declined both. In 1813 President Madison appointed him governor of the Missouri territory, which post he held until the organization of Missouri as a state in 1821, when, being run against his consent for governor of the state, he was defeated, and remained in private life till May, 1822, when President Monroe appointed him superintendent of Indian affairs. He held this office till his death, and discharged its duties with great fidelity and success.

CLARK, **William Tierney**, an English civil engineer, born in 1783, died Sept. 22, 1852. He worked at the trade of a millwright for some years in London, under Rennie, with whom he remained until 1811. He was the engineer of the Middlesex water works, and he also devoted much time and skill to the improvement and construction of suspension bridges. That across the Danube at Pesth was his last and best work.

CLARKE, the name of counties in several of the United States. I. A N. E. co. of Va.; area, 208 sq. m.; pop. in 1850, 7,352, of whom 3,652 were slaves. It is traversed by the Shenandoah, beautifully diversified by hills, valleys, and plains, and comprises a portion of the great valley of Virginia, on the N. W. side of the Blue ridge. The soil is very fertile, and in 1850 produced 306,210 bushels of wheat, 166,897 of corn, 36,915 of oats, 2,236 tons of hay, and 75,314 lbs. of butter. There were 11 churches, and 98 pupils attending public schools. The county was formed in 1836 out of a portion of Frederic co. Value of real estate in 1856, $3,832,537. Capital, Berryville. II. A N. E. central co. of Ga., traversed by the Oconee and 2 of its branches; area about 280 sq. m.; pop. in 1852, 11,229, of whom 5,489 were slaves. Granite is found in great abundance; the principal other minerals are gold, kaolin, pyrites, tourmaline, and garnets. Near the streams the land is fertile, but much of the soil in the uplands is worn out. In 1850 the productions were 4,572 bales of cotton, 289,575 bushels of corn, 65,710 of oats, and 48,942 of sweet potatoes. There were 21 churches, 4 newspaper offices, 200 pupils in the public schools, and 522 attending academies and other schools. The county was named in honor of Gen. Elijah Clarke, an officer of the revolution. Value of real estate in 1856, $1,023,859. Capital, Athens. III. A S. W. co. of Ala.; area, 1,270 sq. m.; pop. in 1850, 9,786, of whom 4,876 were slaves. It is bounded on the W. by the Tombigbee, and on the S. E. by the Alabama river, both of which are here navigable by steamboats. The surface is uneven, and a considerable portion of it occupied by pine forests. Part of the soil is poor and sandy· in other places it is quite fertile. The productions in 1850 were 4,881 bales of cotton, 329,061 bushels of corn, 105,875 of sweet potatoes, and 85 hogsheads of sugar. Number of pupils in the public schools, 666. Capital, Clarkesville. IV. An E. co. of Miss., bordering on Ala., watered by the Chickasawha river; area, 650 sq. m.; pop. in 1850, 5,477, of whom 1,648 were slaves. The surface is somewhat hilly, and occupied partly by pasture lands. Productions in 1850, 174,235 bushels of corn, 2,690 of oats, 78,675 of sweet potatoes, 1,817 bales of cotton, 800 lbs. of beeswax and honey, and 6,690 of rice. Number of pupils in the public schools, 145. The county was named in honor of Judge Clarke, first chancellor of Mississippi. Capital, Quitman. V. A S. W. central co. of Ohio; area, 380 sq. m.; pop. in 1850, 22,178. It is intersected by Mad river, and drained by a number of smaller streams. The surface is finely diversified; the soil is fertile, well watered, and plentifully supplied with timber. Productions in 1850, 839,576 bushels of corn, 195,514 of wheat, 115,616 of oats, 19,097 tons of hay, and 375,145 lbs. of butter. There were 63 churches, and 3,560 pupils attending public schools. The county is traversed by 5 lines of railway. Capital, Springfield. VI. A S. co. of Ind., bordering on Ky., bounded S. E. by the Ohio river; area about 400 sq. m.; pop. 15,828. With the exception of a range of thickly wooded hills in the W. part, the surface is nearly level. The soil is good, and agriculture is in a forward state. Iron, marble, limestone, and hydraulic cement are found in considerable quantities. Productions in 1850, 567,964 bushels of corn, 62,067 of wheat, 120,430 of oats, and 4,600 tons of hay. The county was formed in 1801. Capital, Charleston. VII. A S. co. of Iowa; area, 432 sq. m.; pop. in 1856, 3,978. It is drained by the South, the Whitebreast, and the east fork of Grand river. The surface is moderately uneven, and occupied mainly by prairies. The soil is generally good. Productions in 1856, 9,009 bushels of wheat, 20,703 of oats, and 183,555 of corn.

CLARKE, **Adam**, LL.D., an eminent minister of the Wesleyan Methodist church in England, born in Moybeg, co. of Londonderry, Ireland, in 1760, died at Bayswater, in Middlesex, Aug. 26, 1832. He was the 2d son of John Clarke, A. M., a sizer in Trinity college, Dublin. He preached his first sermon in 1782, when he was 22 years old. Soon after this he was induced by Wesley to go to Kingswood school, but the brutal treatment which he received there, at the hands of the principal and his wife, caused him soon to leave it. He now travelled over some of the hardest circuits and endured many privations and hardships, but uncomplainingly he labored on. He was sent to the Norman isles, where he suffered persecution. He was stationed in Dublin, and subsequently in Manchester, Liverpool, London, Bristol, and other places. About this time he commenced writing his "Commentary," a work displaying
profound learning and critical rea
plan was to make a critical rea
text, literally translating every
the originals, giving the various
found in the different codices,
ing the whole with the autho
He also studied diligently the vari
languages. While engaged on hi
tary, he translated Sturm's "Refle
published a "Bibliographical Dic
6 volumes, containing a chronologi
of the most valuable works in all
ments of literature in most of the
modern languages, to which he s
added 2 supplementary volumes.
same time he published "A Succin
of Polyglot Bibles" from 1516 to 175
Account of the various Editions o
Testament," from the Complutens
that of Griesbach in 1797. While in
where he translated the abbé Fleu
ners of the Ancient Israelites," a w
greatly enlarged and improved, he
tributed to the "Eclectic Review,"
many able papers, particularly on
subjects. From this place he was
don, where he presided over the c
consequence of his acknowledged
in oriental and biblical literature, the
foreign Bible society placed him c
mittee, and to him was chiefly in
superintendence of publishing the A
Such was the estimate put upon h
attainments by that society, that the
the conference at the expiration of
London to allow him to remain. Th
of St. Andrew's at this time conferre
the degree of A.M. In 1807 he pu
1st volume of a work entitled "Succe
cred Literature." This work was s
finished by his son, the Rev. J. B.
A.M. In 1808 the university of St.
in consideration of his literary attain
ferred upon him unsolicited the degr
The year following he was emplo
British government to write a cont
Rymer's *Fœdera*, a work embraci
leagues, treaties, alliances, capitul
confederacies which had at any time
between the crown of England and
ernments of the earth, together with
eral papers illustrating English hist
work had been begun and prosecuted
until it had reached 14 volumes;
additions were made to it by other
death, until it reached 20 folio volu
ing down the history to 1717. Su
10 volumes more were added. T
Dr. Clarke's time were consumed in
at the close of which he was appointe
of the Surrey institution. While enga
Fœdera he issued parts of his con
in 1812 he had completed the I
the book of Joshua. In the mean
the libraries of Cambridge and O.
elected fellow of the society o

ntly he was elected a member of the
h academy, also of the American anti-
ociety. In 1822 he was chosen for the
resident of the Wesleyan conference, an
ich prior to that time had never oc-
the history of Methodism. The year
he was elected a member of the geo-
ciety of London, and also of the royal
ociety. At length the work on which
en laboring for 40 years was brought
and the commentary, which he modest-
"A Help to the Better Understanding
red Writings," was given to the world
he year 1826, the first volume hav-
d in 1810. Having taken charge
ons in Shetland, his time was now
ied in visiting those islands and
over the country soliciting aid. He
d Sunday school and charity ser-
attended anniversaries at different
In 1830, 2 volumes of his sermons were
He frequently visited the schools
had established in Ireland, and as
of the Irish conference exerted him-
s utmost for his native country. On
1832 he was severely indisposed, and
o to draw up some rules for the
of the schools. After visiting sev-
he returned to Liverpool, was pres-
e session of the conference, and deliv-
ual sermon. After this he visited
ister in the established church at
had requested him to come and
a meeting called for the purpose
a "district visiting society." From
he went to Bristol, where he preach-
rom thence he returned home. Hav-
ged to preach at Baywater, he left
hall for the last time. On Sunday
he was attacked with cholera, which
ing in England, and after an in-
t to start for home, he relin-
nope of again seeing it, and gave
p to die. His family were sent for,
ounded by his wife and children, a
tes before midnight his spirit passed
peace.

KE, Sir Arthur, an Irish physician,
778, died Nov. 10, 1857. He enriched
ith several philanthropic institutions.
ed a fever hospital and public baths for
ilors; and a hospital after the plan of
ch *maisons de santé* was established by
316, at the suggestion of his sister-in-
y Morgan. He was the author of sev-
lar essays, of which that "On the Ex-
of Iodine in Tubercular Consumption"
10 editions.

KE, Edward Daniel, LL.D., an Eng-
eller and mineralogist, born at Wil-
Sussex, June 5, 1769, died March 9,
e was graduated at Cambridge, and
seve situations as tutor and travel-
to young men of fortune, in
r he visited the continent. In
ected fellow of his college, and went to Cambridge to reside. The next year he set out as travelling companion to Mr. Cripps, on a long and laborious tour through Denmark, Sweden, Lapland, Finland, Russia, Tartary, Circassia, Asia Minor, Syria, Palestine, Egypt, Greece, Turkey, Austria, Germany, and France. This journey occupied 3½ years, and his record of it comprises 6 vols. 4to. On his return nearly 100 valuable classical manuscripts which he had obtained during his tour, among which was a very celebrated one of the complete works of Plato, were sold to the Bodleian library. He also placed in the vestibule of the university library at Cambridge a colossal statue of Ceres, which he had brought from Eleusis, and a number of ancient marbles from other parts of Greece, for which, as well as for his eminent attainments, the university conferred on him the degree of LL.D. He wrote an essay to prove that a sarcophagus in the British museum was that of Alexander, but it has since been demonstrated to be Egyptian. He took orders in 1805. In 1806 he commenced a course of lectures on mineralogy, and in 1808 a professorship of mineralogy was founded at Cambridge, of which he became the first incumbent. His lectures were very popular, both from his pleasant delivery and his ample resources and ingenuity of illustration. His experiments in anaylsis of minerals by means of the oxyhydrogen blowpipe were productive of important scientific results.

CLARKE, Elijah, an American general, born in North Carolina, died near the beginning of the present century. He removed to Georgia in 1774, became a captain in 1776, and distinguished himself in engagements both with Indians and British on the frontiers of Georgia. Appointed a colonel of militia rangers, and subsequently a brigadier-general, he defeated the British at Musgrave's Hill and Blackstocks, and contributed greatly to the capture of Augusta in 1780. He afterward fought many battles and made several treaties with the Creek Indians. He was accused in 1794 of a design to establish an independent government in the Creek nation, where he had settled in defiance of law; and he is alleged to have finally held a commission with a high salary in the French service.

CLARKE, Henri Jacques Guillaume, comte d'Hunebourg, duc de Feltre, marshal of France, born at Landrecies, Oct. 17, 1765, died at Neuviller, Oct. 28, 1818. After having attained the rank of brigadier-general in the army, Carnot appointed him in 1795 chief of the topographical bureau in the ministry of war, where he participated in digesting the plans which so greatly contributed to the triumphs of the French armies, and was rewarded by being promoted to the rank of general of division. Sent on a secret mission by the directory to watch the movements of Bonaparte, he was fascinated by the young hero, to whom he henceforth devoted his services. He was recalled and deprived of his rank and office by the directory.

After the 18th Brumaire he was restored to his former station, and soon intrusted with several important missions. In 1804 he was nominated councillor of state and private secretary of Napoleon on military affairs. On Aug. 9, 1807, he was appointed successor of Berthier as minister of war, which post he kept until April 3, 1814. His promptness in forming an army of 60,000 soldiers and sending it against the English, who had landed in the island of Walcheren under Lord Chatham in 1809, procured for him as a reward his titles of count and duke. Napoleon had always shown a great partiality for him; but Clarke was among the first to approve of the overthrow of his government and to join the new king. He was created peer of France on June 6, 1814, and appointed minister of war, March 11, 1815, when Napoleon was marching toward Paris. Clarke, more faithful to his new than to his old master, accompanied Louis XVIII. to Ghent, and was sent on a mission to the prince of Wales. On the 2d restoration, he was reappointed to the ministry of war, Sept. 28, 1815, received the marshal's staff July 3, 1816, and 3 months later resigned his post in the cabinet, and retired to private life.

CLARKE, HENRY HYDE, an English writer on practical science and philology, born in London, Dec. 14, 1815. Having been carefully educated by his father, who acquired some note as the projector of two canal routes across the isthmus of Panama, he entered into public life as a civil engineer in London, 1836. Since that time he has been constantly before the public in the literature of his profession, having for 20 years been connected editorially with the "Civil Engineer's and Architect's Journal," and similar periodicals. Among other works, he has published accounts of the hydraulic and hydrostatic docks of the United States, the dikes of Holland, railway traffic of Belgium, &c. At various periods he has devoted attention to, and written on, the electric telegraph, galvanic printing, practical application of acoustics, steam on canals, banking, fire assurance, &c. He has also published papers on the gold mines of California, and a gazetteer of the gold regions of Australia. Having been employed on the N. Bengal and Simla railways, he wrote, in 1857, a work on the railway system, colonization, and defence of British India, advocating the establishment of colonies of British immigrants in the hill countries. The subject attracted the attention of government, and a parliamentary committee has reported favorably on it. In 1858 he began the publication of "Anglo-Saxon History, illustrated by Topographical Nomenclature." As a linguist and philologist, Mr. Clarke has attained a distinguished position. Other engagements, for 12 years past, have interrupted his study of tongues, but it is stated that at the age of 30 he was conversant with 40 languages and dialects, and had a lesser acquaintance with nearly 100, rivalling Mezzofanti in that respect. In 1855 he issued his "New Dictionary of the
English Tongue" (London), in which
out Webster's system to the extent
words. This is the first English dict
which American words have been
A new and enlarged edition was in
in 1858.

CLARKE, JAMES FREEMAN, an
clergyman, born in Hanover, N. H
1810, was graduated at Harvard coll
and at the Cambridge divinity scho
Mr. Clarke was pastor of the Unit
in Louisville, Ky., from 1833 to
church of the Disciples in Boston
to 1850, and from 1853 to the pr
He edited the "Western Messenger
ville from April, 1836, till May, 18
ted De Wette's "Theodore," 2 vols
in Ripley's "Specimens of Foreign L
published "Campaign of 1812," in
and Military Services of Gen. Will
1848; "Eleven Weeks in Europe," 18
tian Doctrine of Forgiveness," 1852
Book and Hymn Book for the Ch
Disciples," 1844 and 1856; "Mem
Marchioness d'Ossoli (Margaret Full
nection with R. W. Emerson and W
ning, 1852; "Christian Doctrine
1854 and 1856, enlarged; also, vario
al sermons, poems, articles in revi
tracts in the series of the Amer
rian association, and miscellanies.—
career as a preacher and writer has
within itself some features suppos
variance, as transcendentalism in
supernaturalism in religion, and ea
tion to practical reforms in real li
lieves heartily in the church, and
have been much devoted to the in
of the forms of worship and fello
has been actively engaged in the
movement from an early period. In
ing he addresses the reason mor
imagination, and the conscience th
sions. The "Worship of the Chu
Disciples" combines the features
on the part of the congregation as in
church, the extempore prayer of th
tionalists, and the silent prayer of t
In faith Mr. Clarke inclines to the
party, so called, in the Unitarian de
and his works on the subjects of "F
and of "Prayer" are treatises wh
tracted much attention.

CLARKE, JOHN, a soldier and
Georgia, born in 1766, died in W
Oct. 15, 1832. He fought in the arm
ican revolution under his father,
Clarke, and, through a series of ra
tions, was elected major-general in
of his state. At a critical period
war of 1812, he was appointed by t
to the command of the forces destin
the sea-coast and southern bou
gia. He was chosen an elector of p
vice-president in 1816, and was afte
elected governor of the State. A

ı he sought rest and retirement by
West Florida.

E, JOHN, one of the founders of
nd, died at Newport, in that colony,
1676. He was a physician in Lon-
came to Massachusetts soon after
ettlement; but being one of the
Anne Hutchinson, he was obliged to
t lady and her associates from that
roceeding to the south, they were
by Roger Williams to his vicinity,
mselves into an organization, and ob-
ı the Indians a district to which they
of the Isle of Rhodes or Rhode
settlement commenced in 1638,
and Mr. Clarke began to employ
preacher. In 1644 he founded at
second Baptist church in America,
its pastor. Venturing a few years
ı in the vicinity of Boston, he was
officer of the government, was
before a parish meeting and then be-
t, and was condemned for what
false teachings to pay a fine of 20
be publicly whipped. Mr. Clarke
discussion, but was obliged to pay his
ceived directions to leave the colony.
sent to England in company with
as an agent of the colony of
and published there a book enti-
from New England, or a Narrative
nd's Persecution." He succeeded
g a revocation of Mr. Coddington's
ı as governor, and remained in Eng-
he return of Williams, till at the end
' mission he had procured a sec-
or the colony, which secured to
at all times his own judgment and
matters of religious concernment.
lludes to him in his history as "the
virtuous Clarke, the persevering and
d envoy." Upon his return in 1663
l the pastorate of his church at New-
ı he retained till his death. In his
his farm for charitable purposes, the
it only to be expended; and it has
ıced annually about $200.

E, M'DONALD, a poet and anomalous
lew York, born in Connecticut, June
lied in New York, March 5, 1842.
years his blue cloak, cloth cap, erect
, and thoughtful, beaming counte-
le him one of the features of Broad-
he was ever in a glow of poetic rev-
lways celebrating in verses the belles
n and the topics of the day. He was
rk much what the fool used to be in
incely families, venting in most mel-
and with half-caught intuitions of
eflections on the events of the times,
miliarly known in the street and in
the mad poet. Yet his oddities were
; he had no vices, always preserved
of deportment, and was a regular at-
the fashionable Grace church. His
re of various character. humorous, sentimental, and indignant, and have a vein of tenderness pervading all their grotesqueness and irregularity. In the midst of inexpressible indignation at fortune for her harshness to beauty or genius, or at fashion for its absurdities and impertinencies, are found touches of delicate human sensibility. They are now rare, though they had several editions, some of the titles of the collections being, "A Review of the Eve of Eternity, and other Poems," published in 1820; "The Elixir of Moonshine, by the Mad Poet," published in 1822; "The Gossip," "Poetic Sketches," and "The Belles of Broadway."

CLARKE, MARY ANNE, mistress of the duke Frederic of York, 2d son of George III., born in 1778, died at Boulogne in 1852. In 1809 she revenged herself upon her royal lover, with whom for some time she had not been on the best terms, by reporting to Col. Wardle the secrets of the duke's management of the army, of which he was commander-in-chief. On Jan. 27 of the same year the colonel brought the matter before the house of commons, of which he was a member. By a majority of 82, the duke was acquitted of the charge of personal corruption which the colonel's motion implied; yet on March 20 the duke tendered his resignation, as the evidence reflected severely upon his character, his mistress having been the chief witness brought before the committee of the house of commons. Her evidence, which was delivered with great impudence of manner, afforded much amusement to the members of that body, while the case yielded a rich harvest to the lovers of scandal generally.

CLARKE, MARY VICTORIA COWDEN, an English authoress, born in London, June 22, 1809. She is the eldest daughter of the accomplished composer and organist, Vincent Novello, and sister of Madame Clara Novello, the singer. In her youth she was the pupil and constant associate of Mary Lamb, and had frequent opportunities of meeting Shelley, Coleridge, Charles Lamb, Keats, Leigh Hunt, Hazlitt, Douglas Jerrold, and other literary celebrities of the day, to whose influence may be attributed the early development of her intellectual powers. In her 15th year she was already a contributor to the magazines. At the age of 19 she was married to Charles Cowden Clarke, the early friend of John Keats, and a man of literary tastes and friendships, and within a year commenced the "Concordance to Shakespeare," with which her name is so honorably connected. This work, after 16 years of uninterrupted labor, 4 of which were devoted to the correction of proofs and the supervision of the printing, was published in London in 1846, in a large octavo of 860 pages, each containing 3 closely printed columns, under the title of the "Complete Concordance to Shakespeare." The undertaking was suggested to Mrs. Clarke while on a visit to a country seat in England, and such was the enthusiasm which it aroused that on the same day she commenced her labors. Her services to Shakespearian literature by this publication have been widely acknowledged; and among the tokens of appreciation which have been bestowed upon her was a memorial from America, consisting of a chair ornamented with small figures of tragedy and comedy carved from the Shakespeare mulberry tree, and with a copy of the Stratford bust of the great dramatist. Nearly every state in the union sent contributions to the gift. Mrs. Clarke is also the author of the "Adventures of Kit Bam, Mariner," the "Girlhood of Shakespeare's Heroines," a novel called the "Iron Cousin," several translations of works on musical theory, and a great number of magazine articles, chiefly on subjects connected with dramatic literature. She finished in Sept. 1858, for an American publishing house, an edition of Shakespeare, without notes, but with a full glossary, the text of which, founded upon that of Dyce, has been subjected to a rigid comparison with all others. Mrs. Clarke is now (1858) living at Nice, Sardinia, with her husband and father, the former of whom has for many years been held in high esteem in England and Scotland as a public lecturer.

CLARKE, Richard, a clergyman of the Episcopal church, rector of St. Philip's church in Charleston, S. C., about the middle of the last century. He was born and educated in England, and was admired and esteemed as a popular preacher and amiable man. He wrote numerous theological works, which show excellent scholarship and an inclination to the mystical sentiments of Jacob Boehm. In 1759 he returned to England, and was for some years pastor of one of the principal churches in London, and subsequently curate of Cheshunt, in Hertfordshire.

CLARKE, Samuel, an English divine, born at Norwich, Oct. 11, 1675, died May 17, 1729. He was educated at Cambridge, at a time when the philosophy of Descartes was still in vogue, and Clarke mastered it and also the new system of Newton. With a view of bringing the old system into disrepute, he translated and published before his 22d year Rohault on "Physics," with notes, in which Newton's more splendid ideas were inserted. His translation was used until the university had acquired confidence in Newton's system. He afterward turned his attention to divinity, and, with a view to ordination, became a devoted student of the sacred Scriptures and of Christian antiquity. He became chaplain to Dr. More, bishop of Norwich. In 1699 he published some theological treatises of a practical nature, and afterward paraphrases of the four Gospels, which have often been printed. In 1704, when he was appointed to deliver the Boyle lecture at Oxford, he selected as his subject the "Being and Attributes of God;" and on being reappointed the next year, took for his subject the "Evidences of Natural and Revealed Religion." These lectures were published and passed through several editions, giving rise to much controversy. About 1706, Clarke made a translation of Newton's "Optics," and was rewarded by the great
matician with a present of £500.
made him one of her chaplains
St. James's, Westminster. At his
degree of D.D., he defended these
ositions: 1. No article of the Christi
delivered in the Holy Scriptures is
to right reason; 2. Without liberty of
action there can be no religion. In
published his celebrated treatise "On th
ture Doctrine of the Trinity." The b
censured by the lower house of conv
and Clarke made some explanations
seem to have given the bishops more
tion than the inferior clergy. In 171
gan a friendly controversy on free w
Leibnitz, who died before it was co
The papers written on each side were
in 1717, in English and French. On
of Sir Isaac Newton, the ministry
the place of master of the mint, but he
the office as unsuitable to his ecclesi
acter. He published 12 books of the
learned notes and a Latin translation,

CLARK'S RIVER, or Flathead
rises near the source of the Missouri
Rocky mountains, Washington territo
for about 200 m. in a N. direction,
bend toward the N. W., and after
into a lake 30 m. long and from 6
wide, called Kulluspelm, or Lac Pend
enters the Columbia river. The g
of its course lies through a mountain
and its total length is about 650 m.

CLARKSON, Thomas, one of the m
ous laborers for the abolition of the sla
born at Wisbeach, Cambridgeshire,
March 28, 1760, died at Playford Hall,
Sept. 26, 1846. He was the son of a cle
and educated at St. John's college, C
In 1786 he obtained the prize for the b
essay on the question, *Anne liceat in*
servitutem dare? ("Is it right to m
slaves against their will?"). The inve
necessary in the preparation of th
aroused his interest in behalf of th
He gave up his professional prospects
he had already taken deacon's orders,
solved to devote his life to the abolitic
slave trade. He translated his prize
English, and published a large edition
tuitous circulation; formed the acquain
the philanthropist Benezet, and of M
Ramsay, Granville Sharp, and Lord
procured intelligence from every vessel
a British harbor which had been engag
slave trade; obtained specimens of the
and manufactures of the native Africa
for exhibition; and finally caused an e
to be made giving an accurate view of
rior of a slave ship, with its cells, grati
barricades for the confinement of the
These measures created a powerful ex
in England on the subject of the
slaves. Mr. Clarkson followed up the
by pamphlet after pamphlet, and in 17

his work on the "Impolicy of the
." Immediately after the publica-
work he went to France to advocate
that country. He there met with
encouragement from Louis XVI.
is celebrated minister, as well as
st influential nobles and clerical
of the nation. Although he en-
opposition in England, he soon
alous supporters. Among these
orce, Whitbread, Sturge, and oth-
d, one of the wealthiest of his
to make good all injuries which
might suffer in his business
and abetting in this movement.
was a long one, and strenuously
parliament and out of it; every
published a new assault on
, and every year the halls of
witnessed a fierce debate on the sub-
Pitt ministry were comparatively
n the cause. It was not till the ac-
Fox and his friends to power in
movement gained a decisive ad-
n 1807 the British government de-
e trade thenceforth illegal, and
ng year it was declared piracy
States. After a temporary re-
m his labors, during which he pub-
ortraiture of the Society of Friends,"
body he cherished a warm sym-
in 1818 a life of William Penn, Mr.
enewed his exertions. He obtained
w with Alexander I. of Russia, and
nfluence in behalf of the extirpation
by all the nations of Europe; and
arose from the overthrow of the
ablishment of the colony of
ne, the recognition of the inde-
f Hayti and Liberia, and in the pre-
the emancipation of the slaves in
d Antigua, he contended for each
me fervor which had animated him
. He lived to witness the emanci-
the negroes in the West Indies in
o attend the great meeting in Exeter
0, held by the British anti-slavery
which he officiated as president un-
His "History of the Abolition
Trade," published in 1808, is one
authorities on the subject. It has
d into French by Bishop Grégoire
le of *Histoire du commerce homi-*
traité des noirs, ou cri des Afri-
leurs oppresseurs (1822, 8vo.), and
edition was printed by the Eng-
ery society, with an anonymous
Lord Brougham (1839). Clark-
ory was honored in America by a
ivered by William Jay (Oct. 23,
similar honors were paid to him in
d France. A medal in his honor
by his native town in 1846; Hay-
her eminent artists were employed
his portrait; and his name was in-
the pedestal of David's statue of Gutenberg in Strasbourg, while the city of London caused his statue to be placed in Guildhall.

CLASON, Isaac S., an American author and actor, born in New York in 1789, died in London in 1834. He received a learned education and inherited a fortune, but his dissipations soon left him penniless, and he was obliged to support himself as a writer, teacher of elocution, and actor. He appeared at the Bowery and Park theatres in leading Shakespearian parts, but with moderate success. In 1825 he published two cantos of "Don Juan," supplementary to the work of Lord Byron, which probably approach nearer in wit and refined grossness to the brilliant original than any other of its numerous imitations. The next year he published a collection of poems with the title of "Horace in New York," in which he celebrated the scandal and gossip of the town. A poem which he wrote in 1833 on the Beauchamp tragedy of Kentucky, he allowed but few persons to see, and it is now lost. Of brilliant natural powers and of cultivated mind, he came to an unheroic end by suicide in London. He had gone thither as a theatrical adventurer, and being reduced to poverty, he sealed up, in company with his mistress, the room in which they lodged, lighted a fire of charcoal, and died by its fumes.

CLASSICS (Lat. *classicus*, of first rank), the appellation given at the revival of letters to those authors who were studied and commented on in the universities. When the European intellect resumed its activity, after the reign of imagination and sentiment in the earlier middle ages, the beautiful and symmetrical relics of ancient literature were its exclusive models. The learned neglected the wild legends, lays, songs, and romances, born of the genius of Christianity and feudalism, which had delighted the contemporaries and successors of Charlemagne, and which dimly foreshadowed all that is highest and peculiar in modern thought, and devoted themselves only to studying the more finished productions of Greek inspiration and of Latin imitation. By degrees the epithet classic was applied not only to the literature, but also to the art, genius, civilization, and all the modes of thought and life of the Greeks and Romans. Meantime modern civilization, with its society, literature, and art, was developing itself on the basis of Christian conceptions and sentiments. The distinction between the spirit and form of the modern and the Greek and Roman literatures produced the long and vivacious controversy concerning the comparative merits of the ancients and moderns, which has assumed various phases in France, England, Germany, and Italy, from the 15th century to the present time. During the last half century the belligerent parties have been distinguished as the classicists and romanticists.—The Greeks, who are the types of classicality, have never been surpassed as an artistic people; and conscious of their own splendid su-

periority in architecture, sculpture, painting, music, scenic display, oratory, and every department of literature, they gave to all other nations with which they came in contact the name of barbarians. A noble and active race, in a genial climate and a land of varied beauty, their whole civilization was the joyous expression of harmonious faculties. They projected the conception of a beautiful sculpturesque humanity into their religion, and all the forces of nature and of an earthly life were deified into clear and fair forms. In the full health of being, with a profound sympathy with the various objects of the world, finding in all preternatural things—in the nymphs, muses, fates, graces, hours, manes, furies, tritons, sirens, titans, in all the minor and all the Olympian gods—only the happy counterparts and associates of man, esteeming gods and men as persons that might struggle with each other, and only the power of a remote, all-encircling fate, which rarely violates the freedom of the world, to be irresistible, their conceptions in every department of thought were unrivalled in the grace of proportion. They admitted nothing monstrous within the circle of their imagination; the gigantic and shapeless fictions of oriental fancy were chastened by them into mild and grand forms; and they made even gorgons and furies admirable according to the soundest æsthetics of the hateful. In poetry and in art they attained to internal harmony, though their public life was always distracted, and their philosophy was often but the utmost refinement of sensualism. Yet their conception of philosophy was characteristic; they esteemed it a species of intellectual melody, the internal harmony of thought and mind, the music of the soul. The Greek authors, who revealed in literature this national mental symmetry and refinement, were the pupils not so much of study and contemplation as of nature and an energetic life. Gymnastic contests formed the groundwork of Hellenic polite education, and from the exhibition of the human body in its fairest and fullest development, by every species of exercise, the imitative arts, especially sculpture, took their strongest impulse and best lessons. When rhetoric came to be taught, it was considered a sort of gymnastic exercise for the intellect, a public festival at which eloquence was to display its address in combat. The popular games became so many theatres for poetry, and odes and dramas were composed with reference to them, and historians sometimes recited their productions to the assembled people. Thus Greek literature was a blossom from the happy and active physical life of the nation. It had the round, definite outlines which belong to the plastic arts, and a symmetry, easy to be apprehended, pervaded the whole and the parts of each production. Every thing in it was positive, clear, and finished, as it was also in the religion and in all the desires and hopes of the Greeks. It is characterized generally by simplicity, imagination, an easy grandeur, and a faultless taste. Jupiter, shaking Ol
the world by his nod, and then she
brosial fragrance from his hair thr
circle of the gods as he smiled to
type of the natural and brillian
the Greeks. The pages of Homer
later tragic writers are alive with
forms of gods and men; and e
great and beautiful in common life
nobled by palpable relations with the
world. Even the mysterious and rapi
of the human heart became bright
conceptions under the theory of div
ventions. Thus the classical literatu
tinguished by declaring the external
tations of sentiments and thoughts ra
their essential qualities, since the Gre
conceived of spirit as divorced fr
by attaining to clear, definite, and
which were possible in the confi
brilliant sphere of Hellenic imagin
arranging these views in such a me
not only the moral and æsthetic sense
but also the intellect may perceive, t
as a whole through the harmonious a
of their parts. The laws of this litera
first reduced to a system in the "P
Aristotle. Among the axioms there
against which writers of the rom
have ever directed violent attacks,
There is nothing beautiful in literatu
arts which may not be clearly analyz
intellect. The distinction between t
comedy should be scrupulously ob
their mixture strictly proscribed:
mits of union with the other. Tra
be written in verse. Tragedy and
equally bound to the three unities
time, and place. Every poem must
tained within prescribed boundaries,
may be easy for the mind to embrac
glance, and to form a single conceptio
ture of it. These are the fundamenta
classical composition, inseparable fro
are, however, a great number of de
tails; and their purest illustration is
the master-pieces of Greek litera
genius of the Romans was for war
policy, and their poetry was for the
borrowed from the Greeks. With th
and organizing character, which del
conquering and making laws for
they could never have originated th
imaginary realm which they inherited
ing almost beneath the same sky as th
but little removed from them in
cherishing with slight variations the
ligion, it was natural that their litera
have the same roots and common q
At the revival of literature in mode
on the contrary, every thing had chan
ligion, society, manners, and, exce
climates. The Greeks developed to
refinement and beauty the purely ea
of man, and had but dim and care
tions of any being or life beyond t

conception every
tal was almost lost in the
infinity, and earthly objects
were but the shadows of a life
ality dawns beyond the grave. The
elighted in the sunny outward mani-
of nature, but the moderns in her
depths. The ideal of the former
a perfectly harmonious human na-
iere to which it is perfectly adapt-
were conscious of a profound
which renders a natural har-
ible. In Greek literature, what is
executed in the utmost perfection;
literature vainly strove to give
to what is infinite. The Greek
that of enjoyment, the modern that of
one is ideal, the other mystical;
sents things more as they are in
l has the precise clearness of
other presents things more with
to their associations, and is pictur-
a shadow of vagueness about it.
ding the changed character of
the ardent enthusiasm of the
men, many of whom were exiled
stored the authority of the classics
of taste in all the universities of
ile chivalry was the ruling ele-
ty, and the popular mind was oc-
tastical traditional songs, fairy
ly narratives, and while a new
hitecture, not less than new social
bespoke a new posture and ten-
human spirit, the voice of scholars
imitation of the ancients, not only
but also in history, politics, and
scholastico-romantic period of
and science, which had produced
followed in the 15th century by a
which many prominent persons were
t with the literature, history,
of ancient Rome and Athens
spirit of their own age, the ex-
ations of society, or the doctrines of
ty. Even Gothic spires were partially
by corrupt Ionic and Corinthian col-
Roman cupolas. The repose and har-
eauty of the classical became the ideal
an poets, and the higher meanings of
were compromised in seeking the
of paganism. Of the many imita-
ancients by the moderns, the most
nd studied attempt was that by the
ragedians in the age of Louis XIV.
l operated only as an influence upon
lderon, and Shakespeare, was made a
rneille, Racine, and Voltaire, and the
and the severance of tragedy from
declared inseparable from dramatic
A neoclassicism arose in France,
spite of many conflicts, has predomi-
rench literature until the successes of
tic school in the present century. Yet,
ion usurped the place of inherent
and originality, art suffered under
a sort of anachronism; and the attempt to rewrite the Greek drama resulted in a mélange of modern sentiments and manners with classical simplicity and regularity, to the detriment of both the former and the latter. After the restoration of Louis XVIII., the republican authors were usually classicists, and the royalist romanticists. In 1852 the abbé Gaume attempted to prove that the corruption of modern society was caused by the early study of classical authors, and recommended that the fathers of the church be substituted for them in the schools and universities. In Italy, Dante had been reproached for writing in what was termed the vulgar tongue, and Petrarch had rested his fame not on his Italian but his Latin poems; and at a later period in England Lord Bacon composed his philosophical works in Latin, because he thought it destined to become the universal language. In 1692 Sir William Temple published an essay upon ancient and modern literature, by which the dispute concerning the classics, then at its height in France, was transferred for a time to England. He extolled the comparative merits of the ancients, and was answered by William Wotton in favor of the moderns. The value of the classics was an incidental topic in the famous controversy which immediately succeeded between Bentley and Boyle concerning the letters of Phalaris. In support of Sir William Temple and the ancients, Swift wrote his allegory entitled the "Battle of the Books." But the most formidable direct attack upon the authority of the classics was by the romantic school of Germany near the beginning of the present century, which, under the direction of the brothers Schlegel, sought to obtain the materials of literature chiefly from the mythology and poetry, the symbolical legends and institutions of the middle ages, and to substitute a mystical sombreness for the plastic clearness of classic thought. The value and use of the classics is still in some respects an open question. Yet with the immense changes wrought by religion, science, and the arts, with spiritual conceptions, an astronomical universe, and social modes so different from those of the ancients, it would be strange if literature remained obedient to the old canons. The lesson most strongly conveyed by classical study is to seek simplicity and a harmonious completeness of thought and statement, and this lesson is not less valuable, though the moulds of ancient literature may be inadequate to the wider field and finer materials of Christian thought. —The influence of the classics at the period of the renaissance is stated in Hallam's "Literary History of Europe," and in other histories of literature, as those of Tiraboschi and Bouterwek. Among the most prominent authors who have written in defence of them, as compared with modern literature, are Racine, Boileau, Mme. Dacier, Sir William Temple, Henry Heine, and Winckelmann; among those who have preferred the moderns are Paolo Beni, Perrault, La Motte, William Wotton, and

the Schlegels. Hegel's *Aesthetik* contains an exhaustive philosophical view of the spirit and works of classical antiquity. The present literary tendencies of Germany and France, and less decisively of England and America, as judged by the popular novels, poems, and dramas, are anti-classical.—The term classical is also, by usage, sometimes applied to writers of all nations who have been permanently admired, and esteemed as authorities, and also to the era in which such writers lived. Thus the Greek classical period extends to about 300 B. C., and the most distinguished authors whom it includes are Homer, Hesiod, Simonides, Sappho, Pindar, Anacreon, Æschylus, Sophocles, Euripides, Aristophanes, Herodotus, Thucydides, Xenophon, Aristotle, Plato, Isocrates, Æschines, and Demosthenes. The Latin classical period begins with Plautus (about 250 B. C.), and ends under the Antonines, in the latter part of the 2d Christian century; and its principal authors are Plautus, Terence, Tibullus, Catullus, Virgil, Horace, Ovid, Propertius, Lucretius, Juvenal, Sallust, Cicero, Cæsar, Livy, Quintilian, Seneca, and Tacitus. The ages of Pericles and Augustus are also termed the classical periods of Greece and Rome. Italy has had two classical periods, that of Dante and Petrarch in the beginning of the 14th century, and that of the renaissance, of the Medici, and of Tasso and Ariosto, more than a century later. The Spanish classical period was in the early part of the 17th century, in the time of Lope de Vega, Cervantes, and Calderon. The French classical period was during the splendid reign of Louis XIV.; and the German classical period embraced the era of Schiller and Goethe, Kant and Hegel, about the beginning of this century. From the time of Shakespeare to the present, there has been no period in English literature which has been styled, by preëminence, classical.

CLASSICUM, in Roman antiquity, the signal for battle. It was usually sounded by the cornu or trumpet, and hence the name was subsequently applied to the instrument itself.

CLATHRI, in Roman architecture, a kind of lattice or trellis-work for covering windows.

CLATSOP, a N. W. co. of Oregon, pop. 462, separated from Washington territory on the N. by the Columbia river, and drained by a number of small streams flowing into the Pacific. The soil is good, but little cultivated. In 1850 the productions amounted to 2,340 bushels of corn, 590 of wheat, 9,280 of potatoes, and 6,350 lbs. of butter. The crop of corn was the largest obtained in any county of the territory. There was 1 church, and the schools and academies numbered 77 pupils.

CLAUBERG, Johann, a German Cartesian philosopher, born at Solingen in 1622, died at Duisburg in 1665. He travelled in France and England, studied at Leyden the philosophy of Descartes, which he was one of the first to introduce into Germany, became professor of philosophy and theology at Duisburg, and gave
an original development to the C
ciples, with a clearness and metho
admired by Leibnitz. The best e
tion of his *Opera Philosophica*
Amsterdam in 1691.

CLAUDE, Jean, a French Prot
born near Agen in 1619, died a
Jan. 18, 1687. He officiated as pas
and Montpellier, but owing to his
to the government scheme for the r
the Protestants and Roman Cathol
interdicted from preaching. The co
abilities of Claude rendered him form
obnoxious to the Catholic party.
against Arnauld and Nicole on the d
transubstantiation, and in 1678 held
sion with Bossuet in presence of Mlle.
a Protestant lady connected with the
niece of Turenne, who wished to r
grounds of her faith by hearing the
of these distinguished champions.
published an account of the conferen
was answered by Claude. On the v
ing on which the revocation of the
Nantes was registered at Paris, h
dered to leave France within 24 h
retired to Holland, where he was r
the prince of Orange, who settled
upon him. The most important of hi
his *Défense de la réformation*, Rouen,

CLAUDE LORRAINE, a landscap
whose real name was Claude Gelé
was called Lorraine from the provin
name, where he was born in 1600.
is variously stated as having taken
Rome in 1678, or Nov. 21, 1682. H
an orphan at 12 years of age, displ
dull intelligence in his youth, and was
acquainted with the pencil in the b
brother, who was established as a
wood at Freiburg. Subsequently h
panied a relative to Rome. By s
he became separated from his gu
left alone with very little money a
an acquaintance. Not discouraged,
he diligently attached himself to his
and managed to earn a subsistenc
supposed to have studied about 2 ye
Godfrey Waal, during which time h
acquainted with architectural drawi
spective. Afterward he received
in painting from Agostino Tassi,
1625 he quitted Rome for a pilgrim
shrine of Loretto, and thence set out
through Italy, spent some time in V
returned to France by the way of
Germany. He was soon extensively
for the duke of Lorraine, who invit
his house, and made him very adv
offers. After a short time, however,
repaired to Italy, and established h
Rome, where he found ample em
One of his earliest patrons was Ca
tivoglio, who presented him to
VIII., and for whom he painted a
beautiful works. He was

ly devoted him-
y recognized as
or more than 40
continued to reside in
very old. He was never
A was dedicated to him
church at Rome, and a
memory at Epinal.—
sed him to be imitated
pain , whereby a vast number
were ned upon collectors as his
order to detect these spurious pro-
his own, he adopted the
ings of such as he was com-
it, which he inscribed with the
urchasers. At his death he left
these drawings, which he called
ritá. One set containing 200
in possession of the duke of Dev-
y have been engraved by Ear-
lished by Boydell under the title
tis. Another is in the British
l its environs, its Tiber and
pendous ruins and classic
ished Claude with inexhaustible
pe l. He would spend whole
en dying nature, and noting
in the skies, or the lights
landscape. His skies are
of brilliant effect, and in no other
his graphic power of shedding
haze over his scenes. One
rated landscapes represents a
e Villa Madama, near Rome,
ope Clement XI. offered as much
be required to cover the surface of
His favorite periods of day were
sunset, when objects are robed in
ate coloring. His figures, how-
rior, and he frequently engaged
o pencil them for him. England
rich in the works of Claude Lor-
onal gallery of London contains
them, two of which, the "St.
the "Embarkation of the Queen of
probably never surpassed. Four of
paintings were taken by Napoleon
ery of Cassel to Paris, where
Malmaison, the residence of the
hine. In 1814 the czar Alex-
them, and they are now in the
y of St. Petersburg.

, a Roman matron. Being accus-
continency, she heard the soothsayers
t only a virtuous woman could move
conveying the image of Cybele to
ch had grounded on a sand bank at
of the Tiber. Coming forward from
trons, and calling on Cybele to
innocence, she seized the rope
attached to the vessel, which im-
moved from its sandy bed and

DIAN (Claudius Claudianus), an
born at Alexandria in the reign of
Great A. D. 365, and living also during the reign of his two sons, Honorius and Arcadius. His education was Greek, but when grown up to manhood he went to Rome, and attached himself to Stilicho, one of the generals of Theodosius, with whom he became a great favorite, arriving at high honors; the great influence he possessed is proved by a statue erected in his honor, discovered at Rome in the 15th century; he returned late in life to Egypt, and probably died there. His poems are very numerous, epics, lyrics, and panegyrics. Some of his epics are the *Raptus Proserpinæ*, in 3 cantos, not quite complete; its great defect consists in making the subject a historical event; the *Gigantomachia*, a fragment extending to 128 lines only; *De Bello Gildonico*, describing the victories of Honorius; *De Bello Getico* or *Pollentino*, in which is described the victory of Stilicho over Alaric the Visigoth, near Pollentia, in 403. In these works there are many defects; but the author displays great strength of intellect and some poetic talent, and is especially to be praised for not succumbing to the enervating spirit of the times; he was, and still is, one of the most admired of the epic poets, and is often quoted, especially by English scholars. Claudian addressed many panegyrics to the distinguished men of his age, as *De Laudibus Stilichonis*, in 3 books, the *Bellum Geticum* making the 4th; 3 books upon the 3d, 4th, and 6th consulships of Honorius; and *In Rufinum*. He was also a pastoral poet of some merit. The best edition of his works is that of the younger Burmann (Amst., 1760). The first volume of a good edition by König appeared in Göttingen in 1808.

CLAUDIUS I., whose full name was Tiberius Claudius Drusus Nero Germanicus, was the 4th Roman emperor, and reigned from A. D. 41 to 54. He was the son of Drusus and Antonia, and the grandson of Tiberius Claudius Nero and Livia, who subsequently became the wife of Augustus. He was born at Lugdunum (Lyons), in Gaul, Aug. 1, 10 B. C., and died A. D. 54. He was a youth of delicate constitution and feeble intellect, neglected and despised by his relatives, and left to the care of pedagogues, women, and slaves. He possessed, however, great industry, and became a tolerable scholar. He was 50 years old and totally inexperienced in political affairs when the murder of Caligula called him to the throne. When the timid student heard of Caligula's fate, rushing into some remote apartment of the palace, he hid himself in terror lest he should be the next victim. In this position he was found by a common soldier, who raised him from the ground and saluted him as emperor. Other soldiers now entered the palace and joined their comrade, and presently the despised recluse was borne to the prætorian camp, and proclaimed by the legionaries, who immediately took the oath of allegiance to their new sovereign. His first acts were acts of mercy. The enthusiasts who had dreamed of restoring the republic were freely pardoned, while only a few of the murderers of Caligula were put to death. But soon evil counsellors alarmed him with fictitious tales of conspiracies, and continually incited him to the perpetration of injustice and cruelty. During his reign the southern part of Britain was subdued and converted into a Roman province, the emperor himself taking part in the conquest, and celebrating a splendid triumph in consequence of it on his return to Rome, on which occasion he obtained from the senate the surname of Britannicus. Several other wars were also waged in this reign, with the nations of Germany, Syria, and Africa. He constructed the famous aqueduct which was named after himself, the harbor of Ostia, and the conduit which carried the waters of Lake Fucinus to the river Liris. He was four times married. His last wife was his own niece Agrippina, who prevailed on him to set aside his son Britannicus, and to adopt hers in his stead, and who, when he repented of this act, and gave indication of his intention to annul it, administered poison to him, and put a period to his existence. He was the author of several historical works, the principal of which were a history of Rome from the battle of Actium to his own times, in 41 books, and a history of Etruria, in 20 books, all lost. II. Marcus Aurelius Claudius Gothicus, Roman emperor from A. D. 268 to 270, born of humble parents in Dardania or Illyria, in 214, died in 270. On the murder of Gallienus he was proclaimed emperor by the conspirators, whose choice was confirmed by the army and senate, March 24, 268. That day was signalized by a victory which the new emperor obtained over the Alemanni, in consequence of which he assumed the surname of Germanicus. The next year, the Goths, having collected a vast fleet manned with over 300,000 men, entered the Euxine from one of the Scythian rivers, passed through the narrow seas which connect it with the Ægean, and, debarking their forces on the Macedonian coast, laid siege to Thessalonica. Claudius collected a great army, and hastened to encounter the barbarians. A terrible engagement took place near Naïssus, in which the Goths were totally defeated, with 50,000 slain. The survivors retreated to the defiles of Mt. Hæmus, where they endeavored to make a stand against the victors; but famine, cold, and pestilence so decimated their ranks that they were soon glad to surrender on condition of having their lives spared. But the pestilence presently spread to the camp of their conquerors, and among its victims was Claudius.

CLAUDIUS CRASSUS, Appius, a Roman decemvir from 451 to 449 B. C. He belonged to the Claudii of Sabine origin, a patrician family noted for its sanguinary cruelty, and for its unrelenting opposition to the plebeians, and to laws extending their political rights. When first a consul, he opposed the Publilian law, enacted in favor of the plebeians. Afterward, when he led the legions of Rome against
the enemy, he was twice defeated
being unwilling to fight under
He punished many officers by
death, beside ordering every 10
beheaded. After the end of his
opposed the revival of an agrarian
plebeians having the upper
into a temporary exile. On
came consul for the second time,
by the curiæ or patricians, and
one of the decemvirs, who ad
previously published 10 tables,
office it was to carry out the law
bune Terentillus Arsa, relating t
and private rights of Roman citi
classes. It is supposed that the de
Appius among them, wished to
power perpetual; at any rate,
themselves arbitrary oppressors b
cians and plebeians. On account
of the Sabines and the Æqui,
virs enlisted troops, and marched
enemy; but Appius and Opius, his
mained at Rome to maintain the po
cemvirs. Appius now fell in love
daughter of Lucius Virginius, an
beian, a centurion in the army,
ised bride of Icilius, previously a
ginius was with the army, havi
daughter under the protection of
cus Claudius, a client of Appius,
the tribunal of the decemvirs
was the daughter of one of his
substituted secretly by the chil
Virginius as her child. This scheme
vised by Appius to bring the girl
She was arrested while on her way
brought before the decemvir, who
she must follow her pretended mas
people, incited by Icilius and her
torius, threatened an outbreak,
ordered Virginia to be brought
house, announcing that a final in
cision in her case should take place
During the night Virginius arriv
camp, and appeared with Icilius
rius—all three in mourning—in th
pius finally adjudged the girl to hi
withstanding the oath and the
her father, and ordered the lict
and deliver her to Marcus. Virg
knife from a butcher standing ne
his daughter, and fled to the army
and Numitorius. Two senators,
Valerius, called on the people in th
against the tyrant, who was thu
convoke the senate. At the same
nius, Icilius, and Numitorius appe
geance to the army in their camps,
their leading, marched upon Ro
cemvirs resigned,, and the senate
restoration of the consuls and
their stead. Appius was put in p
there; according to Livy by suicide
ing to Dionysius of Halicarnassus, h
gled by the order of the tribun

his tool, was banished, and the other
chose a voluntary exile, with the ex-
Opius, who committed suicide.
IUS, Matthias, called Asmus, or the
messenger (*Der Wandsbecker Bote*),
connection with the period-
, a popular German writer,
Aug. 15, 1743, died at Ham-
21, His poems were originally
pieces which appeared from time to
ous periodicals. These he collected
subsequent years, and gave to the
the title of *Asmus Omnia sua se-*
(last edition, Hamburg, 1844).
songs have been set to music by
posers, and have become incorpo-
the national melodies. The most
them is the song on Rhine wine
inlied). In the latter part of his life
became a convert to religious mysti-
His biography has been written by W.
and published in Gotha in 1857.

IUS NERO, a Roman general, con-
C. 207, who inflicted a blow on the
which contributed not a little to
victorious in the 2d Punic
was the south of Italy contend-
Hannibal, when Hasdrubal, after cross-
, was advancing from the north to
of his brother. Elated at having
over so many difficulties, and at being
of accomplishing the great object of
ion. Hasdrubal, unconscious of dan-
to Hannibal to announce
messengers fell into the
Romans, and were brought into
of the consul, who learned from
to his questions, and from the de-
which had been taken from them, how
was the danger that hung over his
himself. On the very day in which
of Hasdrubal were seized, the
legions were marching north-
junction with the army of Liv-
to overwhelm the Carthaginian, with
ength of the two armies. Has-
, during his advance toward
, was led by treacherous guides into
and rugged region on the banks of
where neither his cavalry nor
d act, and where his army was
and himself slain by the forces of
After this victory, which may be
saved Rome, Claudius Nero returned
with the head of Hasdrubal which
to be thrown before the posts of Han-
an evidence of the disaster that had
befallen his brother, his country, and
The *Quid debeas, O Roma, Neronibus*
was written in honor of Claudius.

UDIUS TIBERIUS NERO, the father of
r Tiberius, was a descendant of the
. He served under Julius Cæsar, and
the fleet which defeated that of
t the Canopic mouth of the Nile. He was
ontifex in place of P. Cornelius Scipio. On the murder of Cæsar, he was so fearful of sharing his fate that he even proposed that his assassins should be rewarded. When the triumvirs quarrelled he fled to Perusia, where his eldest son Tiberius, the future emperor, was born; and when Perusia surrendered to the Octavians, he escaped with his wife and child to Neapolis, whence he passed over to Sicily to Sextus Pompeius. Meeting with a cool reception from Pompeius, he soon departed from Sicily for Achaia, where Mark Antony was then sojourning. On the reconciliation of Antony and Octavian he returned to Rome. His wife Livia was much younger than himself, and exceedingly beautiful. Octavian saw her, became deeply enamored of her, and, thinking that all things in Rome were already his, instantly demanded her surrender from her husband. Claudius dared not refuse the demand, gave up his wife as a father would his daughter, and, when the ceremony was over, sat down to the nuptial feast with as much outward unconcern as any ordinary guest. Claudius died soon after, leaving Octavian the guardian of his two sons.

CLAUSEL, Bertrand, count, marshal of France, born at Mirepoix, Dec. 12, 1772, died at Secourrieu, April 21, 1842. He served as a captain in the national legion of the Pyrénées, and distinguished himself in the war against Spain. In 1798 he was appointed chief of the staff to Gen. Grouchy; served in the so-called "army of England," assembling on the shores of the British channel, and then was sent to Italy in a diplomatic capacity. He succeeded in obtaining the resignation of Charles Emanuel IV., king of Sardinia, and accomplished his mission with such forbearance and courtesy that the dethroned prince, as a token of his gratitude, presented him with a masterpiece of Gerard Douw, valued at $200,000; Clausel accepted, but only to offer it to the gallery of the Louvre. In 1801 he was sent to St. Domingo with Gen. Leclerc; he served afterward in Holland and Italy, and coöperated in the conquest of Austria, by taking possession of the Illyrian provinces in July, 1809. Being ordered to Spain, he greatly distinguished himself in the battle of Salamanca, July 23, 1812. The French army would have been entirely destroyed if it had not been for Clausel, who, becoming commander-in-chief in place of Marmont, who had been disabled, effected a skilful retreat behind the Tormes. In 1813, on the defeat of King Joseph at Vittoria, he succeeded in impeding the progress of the English, and thus gave Marshal Soult time to protect the frontiers of France. After the abdication of Napoleon at Fontainebleau, advances were made to him by the Bourbons; but on the return of the emperor from Elba he was among the first to join him, and received from him the command of the army of the western Pyrénées. He forced the duchess d'Angoulême to evacuate Bordeaux, and was, after the restoration, sentenced to death by a court martial, Sept. 11, 1816, but succeeded in escaping to the United States, where he resided for several years. An amnesty having been granted to him in 1820, he returned to France, and in 1827 was elected to the chamber of deputies. After the revolution of 1830, he received the command of the French army in Algeria, which he held for a few months only. Made marshal of France in 1832, he was sent back to Africa in 1835 with the title of governor-general of Algeria; but an unfortunate expedition against Constantine was seized upon as a pretext against him. In vain he attempted to show that his ill success had been caused by the scantiness of his resources. He was recalled, but on visiting Algeria in 1838 and 1839, he was welcomed with enthusiastic marks of esteem by the colonists.

CLAUSENBURG. See KLAUSENBURG.

CLAUSS, WILHELMINE, a pianist, born in Prague, Bohemia, Dec. 13, 1834, made her first public appearance in 1849, and has been favorably received in Dresden, Leipsic, Berlin, England, and France. She has contributed much to popularize Beethoven, Mozart, and other classic German composers. Her influence in this respect is especially great in Paris, where she has resided since May, 1855, when she married M. Frederic Szarvady, late secretary of the Hungarian embassy.

CLAUSTHAL, a mining district and town of Hanover; pop. of the former 32,813, and of the latter 9,200. The town is situated on the Zellerbach, 26 m. N. E. of Göttingen. It stands in a bleak district, on the top and slopes of a hill, about 1,800 feet above the sea. It is regularly laid out, having been frequently burned down and rebuilt, but the houses are generally of wood. It contains a mining school, with a good collection of models of mines and minerals, a mint at which 14,000 silver dollars are coined weekly, and over 600 gold ducats yearly, and has also a church, court house, and gymnasium. One of the mines reaches 500 feet below the level of the Baltic, and is drained by a tunnel cut through the mountain to a distance of 6 m. The machinery of the mines is worked by water power, and every stream in the vicinity is carefully appropriated to this purpose; the various canals, which extend from mill to mill throughout the mines, have an aggregate length of 125 miles. These mines have been worked since the 11th century.

CLAVARIUM, a donative received by Roman soldiers, for the purpose of providing themselves with a kind of sharp-pointed shoe nails, that they might have a firmer footing on the ground. Under the later emperors, the clavarium became a frequent pretence for demanding largesses.

CLAVES INSULÆ, or HOUSE OF KEYS, in the isle of Man, a self-perpetuating body, consisting of 24 principal landed proprietors, who are reckoned representatives of the people, and who possess concurrent legislative authority and appellate jurisdiction at common law. They
may be assembled by the governo
who is appointed by the crown;
of 13 members gives validity to the
and from their judicial decision
appeal but to the sovereign in council.

CLAVICHORD, or CLARI
keyed instrument, now out of
of a spinet. The strings, being
with cloth, emitted a soft, sweet
it was sometimes called the dumb

CLAVICLE (Lat. *claviculus*, fr
key), the collar bone, resembling in
Italic letter *f*. It articulates with the
or breast bone, at the root of the
with the acromion process of the sc
shoulder. The sternal extremity is
triangular, with a surface for articula
the sternum; the humeral extremity
spongy, with an articular face for the
process of the scapula. The sternal
anteriorly, and the humeral ⅓ concave
The clavicle, beside giving strength to
shoulder, serves to prevent it from
much forward. It also protects impo
sels lying behind it. Being located im
beneath the skin, it forms a sort of ri
is very marked in persons who are
In the male, the clavicles are shor
and more curved than in the fem

CLAVIÈRE, ÉTIENNE, a banker of
born Jan. 27, 1735, established himself
where he became acquainted with
Brissot, and other leaders of the re
party. He was appointed minister
in March, 1792. As an opponent o
treme measures of Robespierre, he wa
June 2, 1793, and to escape the
stabbed himself to death on Dec. 8,
poisoned herself 2 days afterward.
extensively on financial subjects.

CLAVIGERO, FRANCISCO SAVERIO
ican historian, born in Vera Cruz ab
died at Cesena, in Italy, Oct. 1793.
years in collecting historical mate
and acquiring the native languages.
suppression of the order of Jesuits, of
was a member (1767), he retired to Ce
he wrote a "History of Mexico before
the Spanish Conquest" (1521), in It
work evinces more extensive rese
critical judgment. An English tr
was published in 1787.

CLAVIJO, RUY GONZALEZ DE, on
ambassadors of Henry III. of Castile t
lane, died in Madrid in 1412, wrote
account of the whole embassy, its
and its results. It was first publ
by Argote de Molina, the antiquary o
of Philip II., under the title of *Vida*
Tamerlan, or "Life of the Great T
though it contained only a diary of
sadors, beginning in May, 1403, wl
barked at Puerto Santa Maria, n
ending in March, 1406, when they
on their return. A new and excel
appeared in Madrid in 1782. This w

teresting descriptions of Constantinople, nd. Teheran, and of Samarcand, where ors were sumptuously entertained nauu. Clavijo, on his return to Madrid, xived with distinction by the king, was he witnesses of the king's will, and was n the convent of St. Francis. A life of is to be found in vol. iv. of *Hijos de* , &c. (Madrid, 1789).

VIJO Y FAXARDO, José, a Spaniard, bout 1730, in the Canary islands, died in in 1806, was favorably known as a writer, es his notoriety mainly to his duel with chais, who challenged him because ad broken his promise to marry one of ers to whom he had paid his addresses. influence of Beaumarchais he lost the f keeper of the archives, which he had Madrid; but a few years later he was ted editor of the official paper, *Mercurio* , and also officiated for some time as a theatre. He furnished a Spanish n of Buffon's "Natural History," for was rewarded by being appointed as-director of the museum of natural his-Madrid. His adventure with Beaumar-sister has been dramatized by several and most successfully by Goethe, who owever, his text from the unfavorable in witty Frenchman's memoirs, while aid to have been a worthy and ac-gentleman.

IUS, CHRISTOPH, a German mathema-born at Bamberg in 1537, died in 1612, d as professor in Rome, and was em-in the rectification of the calendar under regory. His principal works are *Calen-dom. Gregoriani Explicatio* (Rome, 1605, *ommentare über den Euklides*, includ-his *Opera Mathematica* (Mentz, 1612, fol.)

VUS, a band or stripe of purple on the f ancient Roman senators and knights. f two fashions, one broad and the other the former being a distinctive badge of torial order, the latter of the eques-n the time of the emperors, those sons tors and knights who were preparing il office were permitted to assume the tripe.

VUS ANNALIS, or yearly nail, refers y Roman method of registering time of nails. When letters had scarcely into use, it was the custom, derived Tuscan usage, for the highest magistrate on the ides of September, to drive a the wall of the temple of Jupiter s Maximus.

XTON, ALEXANDER, a commodore in the avy, a native of Maryland, born about red the navy as midshipman in June, promoted to a lieutenancy in Jan. 1813, ved in the sloop of war Wasp in her rith the British sloop of war Frolic, on , 1812. (See JONES, JACOB.) He was d to the rank of master commandant in March, 1820, and to that of captain in 1831, performing much active service in both grades. He died on March 7, 1841, at Talcahuana, Chili, while in command of the squadron in the Pacific ocean.

CLAY. Along the banks of most rivers, and at the bottoms of ponds, lakes, and of the ocean, a fine sediment is constantly accumulating, which forms beds of a tough plastic substance easily moulded into any form, which it retains when dry. This substance, called clay, mixes easily with water in all proportions, and when diffused through a large body of it subsides very slowly. When the high banks of this material along the north shore of Lake Erie are washed by the waves, the waters are discolored with it for miles out into the lake. As the sediment accumulates in any place, though at first apparently of a tough, doughy, homogeneous mass, it is found to assume a flaky structure, dividing into thin leaves, which are its lines of stratification, and are retained as such when it is converted into more solid material, as into the clay slate (roofing slate) of the older geological formations. In all past periods, so far as we can trace geological operations, deposits of clay appear to have been produced as they now are, from the wash of existing rock formations. The oldest granites contain in their feldspar and quartz its material elements, and the date of the ancient metamorphic slates derived from these is lost in the obscurity of the most remote epochs. The same granites have continued to yield the materials for new clay beds, and the slates and shales produced from them in all the geological formations still furnish this substance to be again moulded into a repetition of these forms. Coming from such varied sources, and intermixed as its ingredients are in the transport of river currents, it is strange that it should approach to any uniformity of composition. That it does so is evident from its presenting the same general physical features, by which it is distinguished in all parts of the world; but that this composition is not exact is also evident from its numerous varieties, no less than 167 being described by Brongniart in his *Traité des arts céramiques ou des poteries.* The purest kinds of clay are those which are derived directly from the decomposition of the granitic rocks, which may be considered the original source of the clays. These rocks are principally composed of the 3 minerals, quartz, feldspar, and mica; and though in some localities they are the most imperishable of all rocks, in others, from some unexplained cause, they are subject to decompose, not merely where exposed to the immediate action of the weather, but to the depth of 100 feet or more below the surface. The whole mass may retain its appearance of solidity, and its minerals their distinctive form, when it is all so soft as to be excavated with a pick, and the disintegrated quartz may be extracted with a knife-blade from the soft feldspar. As the surface waters flow over such materials they convey them in part away, some mechanically suspended and some in solution. The feldspar, from which the alumina, the principal element in clay, is wholly derived, is a silicate of alumina united with a silicate of some base, which may be either potash, soda, lime, or magnesia, and a portion of the alumina may be replaced with an equivalent proportion of oxide of iron. These ingredients, in the decomposition of the mineral, react upon each other, and numerous compounds are produced. Silica combined with alumina, and holding a definite proportion of water, is deposited, and constitutes the purest form of clay, or kaolin. When separated from the uncombined silica and undecomposed feldspar that may be present, the plastic portion consists of alumina 44.5, silica 40.0, and water 15.5, and is represented by the formula $Al_2 O_3, Si O_3+2HO$. The water, from the difficult solubility of the compound in acids, does not appear to be chemically combined to form a hydrous silicate of alumina. But this simple compound of 1 atom of alumina and 1 of silica with 2 of water is not met with unmixed with other ingredients which modify the properties of pure clay. Iron almost always manifests its presence, when the clay is burned, by the red color of its peroxide. Carbonates of lime and magnesia are detected by their effervescence with acids, and their rendering the substance fusible, an effect also produced by the salts of potash and soda derived from the feldspar. Mica in a fine state of division and some other minerals may also be present. As clay beds in the process of accumulation are often the habitats of shellfish, and may constitute a soil covered with a vegetable growth, organic matters are also often found in it. According to its purity it is infusible, and retains its color unchanged when burned. In a dry state it adheres to the tongue, is very absorbent of water, and possesses a peculiar odor called argillaceous. Clay, being gradually heated, parts with its water and diminishes in bulk without cracking. Heated to redness, it forms a solid mass, which retains its form even if placed when cool in water and allowed to absorb this into its pores. Free from foreign substances, it bears the most intense furnace heat without melting, and is hence well suited for the manufacture of crucibles and fire brick. When impure, it may melt at a high heat and form a glaze. Substances are mixed with it to produce this effect, as in the manufacture of porcelain. In the manufacture of brick and other objects, it is tempered with sand in order to counteract its tendency to shrink.—The most important varieties of clay are those used for the manufacture of porcelain, and called China clay, or kaolin; potters' clay, for the manufacture of earthenware; common clay, for the manufacture of brick; fire clay, for fire brick and crucibles; pipe clay; and a clay used in Europe for making light, porous bricks, which float upon water. Kaolin, the composition of which has already been given, was originally known as a Chinese clay, and was so named from "the Chinese word *kao-ling*, meaning high ridge, the name of a hill near Jauchau Fu, where this mineral is obtained" (Dana's "Mineralogy"). It has been used from remote periods by the Chinese, and in Japan also it has long been found and employed for the same purposes as in China. To temper the clay, it is mixed with petunse, which is a quartz and feldspar rock, in which the former mineral largely predominates. A similar clay is met with near Meissen in Saxony, of which the Dresden china is manufactured. It is also worked near Passau in Bavaria, near Limoges in France, and at other places on the continent. In England it is found in Devonshire, and at St. Austle in Cornwall. The stage road from Plymouth to Truro passes over the granitic hills, upon the sides of which are seen the great catch-pools, or vats, in which the wash of the decomposed rocks is collected and allowed to settle, passing from one into another. The fine sediment left dry by drawing off the water is taken out of these in blocks and exposed to the weather for a few months, when it is crushed and packed in casks to be sent to the Staffordshire potteries. It is then an impalpable white powder, consisting of 60 parts of alumina and 20 of silica. It displays so perfectly the peculiar sensitiveness of clay to impressions, that if stamped with a seal, then dried, and all traces of the impression pared away, this will again appear on baking the lump. Such clays may be obtained in this country, an excellent material being found in the graphic granite of Brunswick, Maine, and also at Haddam, Connecticut. At each place it is a coarse mixture of very pure quartz and feldspar. At the latter locality it has of late been quarried to be broken up and converted into kaolin for the white ware pottery at Williamsburg, opposite New York city. It is probable that many other sources of it will be discovered.—Potters' clay is a fusible quality, usually containing some oxide of iron and carbonate of lime, the latter ingredient sometimes causing it to effervesce slightly with acids, and the former giving it after burning a red or yellow color. It is of no regular c [illegible] osi [illegible] some qualities called by this [illegible] be regarded as brick clay. [illegible] New [illegible] near Woodbridge, and also at South A [illegible] beds of clay are worked to great extent f [illegible] manufacture of stone ware, which also f [illegible] an excellent material for fire brick. Simi [illegible] posits also compose the banks of the D [illegible] river between Bordentown and Bu [illegible] They all belong to the series of upper [illegible] rocks, underlying the green sand beds.— [illegible] mon brick clay is usually obtained fr [illegible] deposits. The color of the brick [illegible] the quantity of oxide of iron in t [illegible] beds found in Wisconsin, [illegible] are so free from this colo [illegible] bricks are of a straw color. [illegible] esteemed as to be transported [illegible] to New York city.—Fire clay f [illegible]

the most part from the coal forma-
coal bed, with very rare exceptions,
a stratum of bluish gray clay, which
the solidity of structure of stone,
is found to be easily cut with a knife.
contains some carbonaceous matter
seams and giving them a black color,
ounds with the fossil stigmaria roots,
all converted into the same material
t of the beds. When ground to pow-
mill, and mixed with quartz sand, ob-
the dstone beds of the same
an excellent quality of fire
-burned brick also broken up
the clay improves its quality,
o retain better its shape after mould-
a mixture is well adapted for the
of crucibles. The following are
a number of the best foreign fire
f Gros Almerode being the material
the famous Hessian crucibles are
the addition of an equal weight of
rbridge clay is the well known
fire brick of this name.

o.	Gros Almerode.		Beaufois, Ardennes.	Brierly Hill, near Stourbridge.		Schiendorf.
	Berthier.	Salvetat.	Berthier.	Berthier.	Salvetat.	Salvetat.
e ...	..	0.43	..	..	..	0.50
wa- ...	15.2	14.00	19	10.8	17.84	16.50
...	46.5	47.50	52	63.7	45.25	45.79
...	34.9	34.37	27	20.7	28.77	28.10
n.	3.0	1.24	2	4.0	7.72	6.55
...	..	0.50	..	..	0.47	2.00
...	..	1.00	..	..	..	..

beds of the coal formation are exten-
e use of at Newcastle for the manu-
large gas retorts as well as of fire
er of different qualities of clay
which are from beds overlaid
and worked with it. Dr. Richardson
following analyses of these varieties:

	1.	2.	3.	4.	5.	6.	7.
...	51.10	47.55	48.55	51.11	71.28	83.29	69.25
...	31.35	29.50	30.25	30.40	17.75	8.10	17.90
h..	4.63	9.18	4.06	4.91	2.43	1.88	2.97
...	1.46	1.34	1.66	1.76		2.99	1.80
...	1.54	0.71	1.91	trace	2.80		
or- ter	10.47	12.01	10.67	12.29	6.94	8.64	7.58

is a pure variety of potters' clay, the
h is found at Poole in Dorsetshire,
in the isle of Purbeck. It is in-
softened in baking, so that the
may be bent while hot.—A very
quality of clay was long ago known in
which produced bricks so light and
hat they floated upon water. (See
The clay was found in Spain, and cen-
rard in Tuscany. Its composition
per cent., magnesia 17, alumina
4. The bricks were remarkably
and poor conductors of heat.
be held in the hand by one end
while the other was red hot. Clay of similar properties was afterward met with in central France, which when mixed with $\frac{1}{20}$ its weight of ordinary clay produced bricks of this character. When submitted by Ehrenberg to microscopic examination, these clays were found to consist of the shelly coverings of infusoria. Such collections of these microscopic silicious shells forming beds of clay are not uncommon in this country, particularly at the bottom of peat bogs; and it is highly probable they might be in many places turned to useful account. Ehrenberg, knowing that the clay under Berlin was composed of these organic remains, concluded it was adapted to this use, which proved to be the case. In the banks of the river Spree it is found sometimes 100 feet thick, of a light gray color, and almost entirely made up of these little shells, of which it takes no less than 9 to equal the diameter of a human hair.—Beside its use for brick, tiles, and earthenware, clay is applied to several other purposes, as for the manufacture of mosaic tesseræ, buttons, and artificial gems; for the manufacture of alum; for clarifying sugar by the process called claying; for producing a glaze upon paper-hangings; for the construction of adobe houses; and for the fulling or scouring of woollen cloths. The clay used for this last purpose is called fullers' earth. It is of an unctuous, soft, and dull quality, and is distinguished from other clays by falling to pieces in water with a crackling noise, instead of forming a paste as other clays do. Applied to cloth, it absorbs the oil and greasy matters. Its use has for some time been gradually giving way to that of soap.

CLAY, the name of counties in several of the United States. I. A S.E. co. of Ky.; area estimated at 870 sq. m.; pop. in 1850, 5,421, of whom 515 were slaves. The surface is mountainous, and is intersected by the S. fork of Kentucky river. Coal and iron are the principal minerals; the manufacture of salt is carried on to a great extent, and the forests are large and numerous. Productions in 1850, 214,659 bushels of corn, 15,694 of oats, 10,419 lbs. of wool, and 8,621 of flax. There were 10 churches, and 300 pupils attending public schools. The county was organized in 1806, and named in honor of Gen. Green Clay, an officer in the war of 1812. Capital, Manchester. II. A W. co. of Ind., area 360 sq. m., drained by Eel river, and containing beds of coal and iron ore; pop. in 1850, 7,944. It has a level surface and a generally productive soil. In 1850 the harvest amounted to 357,832 bushels of corn, 33,039 of wheat, 39,210 of oats, and 2,003 tons of hay. In addition to these productions, the county exports cattle, horses, and swine. The Wabash and Erie canal and a railroad from Terre Haute to Indianapolis pass through it. Organized in 1825. Capital, Bowling Green. III. A S. E. co. of Ill., area 440 sq. m., watered by the Little Wabash river; pop. in 1855, 7,076. The surface is moderately uneven and occupied by forests and fertile prairies. In 1850 the productions were 245,575 bushels of corn, 38,315 of oats, and 320 tons of hay. There were 8 churches, and 480 pupils attending public schools. Capital, Maysville. IV. A W. co. of Mo., area 415 sq. m., bounded S. by the Missouri river; pop. in 1856, 12,728, of whom 3,500 were slaves. The surface is somewhat uneven, and partly occupied by forests of oak, black walnut, ash, and other trees. The soil is fertile, and rests upon a basis of sandstone and limestone. In 1850 this county yielded 834,830 bushels of corn, 50,890 of wheat, 112,027 of oats, and 1,288½ tons of hemp. There were 19 churches, and 780 pupils attending public schools. Cattle, horses, and swine are raised in considerable numbers. Capital, Liberty. V. A N. W. co. of Iowa, area about 600 sq. m., drained by Lizard river, an affluent of the Des Moines, and by the Little Sioux and its branches. It has been recently erected, and is not included in the census of 1856.

CLAY, Cassius Marcellus, an American anti-slavery politician, son of Gen. Green Clay, born in Madison co., Ky., Oct. 19, 1810. After studying in Transylvania university, at Lexington, Ky., he entered the junior class of Yale college, where he was graduated in 1832, and returned to Kentucky. He devoted himself to the law, and in 1835 was elected to the state legislature. Defeated the next year on account of his advocacy of internal improvements, he was triumphantly reëlected in 1837. In 1839 he was a member of the national whig convention at Harrisburg which nominated William Henry Harrison for president. Removing to Lexington, he was elected to the legislature from Fayette co. in 1840, but was defeated in 1841, after an exciting canvass, by reason of his opinions on the slavery question. The improved jury system and the common school system of Kentucky are in large measure due to his efforts while in the legislature. He denounced the scheme of Texan annexation as designed for the extension of slavery, and in 1844 traversed the northern states, addressing immense audiences in favor of the whig presidential candidate. On June 3, 1845, he issued in Lexington, Ky., the first number of the "True American," a weekly newspaper, devoted to the overthrow of slavery in that state. It aroused indignant opposition, and while he was sick, in August following, his press was seized by a mob and sent to Cincinnati. He was threatened by public resolution with assassination, but upon recovery from his illness revived his paper, printing it in Cincinnati and publishing it in Lexington. Public sentiment came gradually to support the principle of the freedom of the press, and Mr. Clay was able to keep an anti-slavery journal in the field, first at Lexington, and afterward at Louisville. Upon the declaration of war against Mexico in 1846, he entered the service as captain of the "old infantry," a volunteer company, which had already distinguished itself in the battle of Tippecanoe in 1811, and which now converted into dragoons. He reached Mon-terey while it was the head-quarters of Taylor, and was detached from his and ordered to the van of the army at Under command of Maj. Gaines, who dered to advance and find the enemy, Clay was taken prisoner, Jan. 23, 1847, a carnacion, over 100 miles in advance of main army. With 71 associates he was ma through San Luis Potosi to the city of Me On one occasion, when a part of the escaped, the gallant bearing and presence mind of Capt. Clay saved the remainder massacre. He was exchanged, and re home was presented by his fellow-cit the autumn of 1847 with a sword in honor his services. In 1848 he vigorously labored f the nomination of Gen. Taylor for the dency by the whig national convention opposition to the friends of Henry question of changing the state constitution agitated the next year, and by his influence large convention of emancipationists as at Frankfort. In 1850 he separated fr whig party, and presented himself as a cand date for governor of Kentucky on the basis a political organization against slavery. canvassed the whole state amid excit peril, and received nearly 5,000 votes, feating the whig nominee for the first more than 20 years. He has not since been a candidate before the people, but quently addressed political assemblies in ent parts of the country.

CLAY, Clement Comer, a U. S. senator Alabama, born in Halifax co., Va., Dec. 1789. His father, William Clay, en revolutionary army as a private sol age of 16, and served till the siege of and surrender of Cornwallis. After the of the war he removed with his fam of the Alleghanies, and settled in Gra Tenn. Young Clay completed his edu the East Tennessee university at Knox studied law with the late Hugh L. White was admitted to the bar in 1809; and re Huntsville, Madison co., Ala. (then a te in 1811, where he has since resided. He himself diligently to his profession, and diately entered upon a lucrative practice. 1813, when hostilities were commenced by Creek Indians, Mr. Clay volunteered as a vate in a battalion raised in Madison co., was assigned the rank of adjutant. In he was elected a member of the territo cil. In 1819 he was elected a delegate convention called to form a constitution state government, and was chairman of committee to report a plan for a state tion. At the meeting of the first le of the new state in 1820, Mr. Clay was one of the circuit judges; he was th the other judges, elevated to the office of justice, though he was little over 30 and was the youngest man on the be

esigned and resumed his practice at
In 18 he was sent to the legisla-
chosen speaker of
. 1829 he was nominated
l after a somewhat exciting
ed. He was reëlected in 1831,
1833, and served 6 years in the
of congress, as a conspicuous ad-
ler of the leading measures of
ninistration. In 1835 he
ed for governor. At that time the
g forward Hugh L. White (Judge
friend and law tutor) as an independ-
late for the presidency was developed;
lay, notwithstanding his friendly per-
ions with Judge White, took ground
of . Van Buren. The opposition,
hite movement would so di-
party as to enable them to
of the state, brought out as
Mr. Enoch Parsons; but Judge
ed by a majority of over 13,000.
the expiration of his term as
was elected to the U. S. senate,
seat at the extra session called by
an Buren in Sept. 1837. He served
se of the extra session of 1841, when
in consequence of ill health in his
was throughout an adherent of the
and usages of the democratic party,
porter of Van Buren's administration.
xtra session of 1841, he opposed the
the establishment of a national bank,
Jackson's administration he had
rt to recharter the old bank.
e senate he has devoted himself
on and the peaceful pursuits of
steadily declining to accept public
kind.

Comer, jr., son of the pre-
d like him, U. S. senator from Ala-
born in Madison co. in that state in
was graduated from the law depart-
the university of Virginia in 1839,
e profession further with his father,
dmitted to the bar in 1840. In 1842
cted to the legislature, and was re-
1844. In 1846 he was elected judge
nty court, which office he resigned in
Nov. 1853, he was elected to the U. S.
d took his seat in Dec. 1854. During
of Gen. Pierce's presidency, Judge
warm advocate of the leading meas-
dministation. His first set speech
e of the executive veto of the in-
bill. In 1856 he delivered (in
an elaborate speech in support of
s and measures advocated by the
party in the presidential election of
In Nov. 1857, he was reëlected for a
m of 6 years from March 4, 1859, though
m had not yet expired, and the legisla-
never before elected a senator in ad-
Dec. 1857, he pronounced a brief ora-
occasion of the death of Senator But-
Carolina, which, in point of analysis of character and touching pathos, was a model of eulogistic eloquence. In the spring of 1858 he delivered a carefully prepared speech in favor of the admission of Kansas under the Lecompton constitution. Later in the session he spoke in favor of a bill repealing the bounty on vessels engaged in the Newfoundland fisheries. Judge Clay is an accomplished classical scholar, and a laborious student. He seldom engages in the running debates of the senate. When quite young he married Miss Virginia Tunsell of Tuscaloosa.

CLAY, Green, an American general, born in Powhatan co., Va., Aug. 14, 1757, died Oct. 31, 1826. Prompted by the example of Boone's adventurous career in Kentucky, he migrated to that district before he was 20 years of age. He entered the office of a surveyor, whose deputy he soon became; afterward he engaged in the surveying business on his own account, and by locating lands laid the foundation of a fortune. He was a representative of the Kentucky district in the Virginia legislature; was a member of the Virginia convention which ratified the federal constitution of 1789, in favor of which he spoke and voted; and was a leading member of the convention which formed the Kentucky constitution in 1799. He served for a long time in both branches of the state legislature, and was speaker of the senate. In 1813 he led 3,000 Kentucky volunteers to the relief of Gen. Harrison, then besieged in Fort Meigs by the British. Cutting his way through the hostile lines, this accession of strength to the fort forced the enemy to withdraw. Gen. Harrison left him in command of Fort Meigs, which was soon after unsuccessfully attacked by a large force of British and Indians under Gen. Proctor and the famous chief Tecumseh. For his skilful conduct of this defence, Gen. Clay received the special thanks of Gen. Harrison. At the close of the war he retired to his estate in Kentucky, and devoted the remainder of his life to agricultural pursuits.

CLAY, Henry, an American statesman, born in a rude rural district known to its vicinity as "the Slashes," in the co. of Hanover, not far from Richmond, Va., April 12, 1777, died at Washington, June 29, 1852. His father was a Baptist preacher, quite poor, who probably derived little income from his profession, nearly every property owner in Virginia in those days being an adherent of the Episcopal church. The father died in 1782, leaving a small and encumbered property to his widow, with their 7 young children, of whom Henry was the 5th. No public and very meagre voluntary facilities for education existed in rural Virginia at that era of general poverty and alarm, so that what little schooling young Clay obtained was imparted in a log-cabin school-house by self-appointed teachers of very moderate acquirements. His mother, however, was a woman of decided mental force, as well as of fervent piety and high moral worth, and her son's recollections of her were fraught with lessons of virtue and excel-

lence. But, in 1792, having intermarried with Mr. Henry Watkins, she emigrated to Kentucky, and Henry saw her no more. She took with her all her children but the eldest son (who soon died) and Henry, for whom a place had been procured in a small retail store in Richmond. He soon left this for employment in the office of Mr. Peter Tinsley, clerk of the high court of chancery, where he remained 4 years, passing thence to the law office of Mr. Robert Brooke, then attorney-general, afterward governor, of Virginia. During his clerkship with Mr. Tinsley, he attracted the special regard of the eminent Chancellor Wythe, who employed him as an amanuensis, and who in turn counselled the youth as a father, directed his studies, and inspired him especially with a love for the best treatises on the structure and grammar of our language—those of Bishop Lowth, Horne Tooke, &c. Here young Clay acquired, along with the ability to write and speak correctly and forcibly, that neat and admirable chirography for which he was distinguished through life.—In Nov. 1797, having been licensed in the court of appeals to practise law, though not yet 21, and having pursued the study of his profession regularly for less than a year, he migrated to Kentucky and opened an office in Lexington, then its most considerable village. Though a penniless youth among strangers, he was soon surrounded by clients and friends. "I remember," said he, in a speech to his admiring neighbors, in 1842, "how comfortable I thought I should be if I could make £100 Virginia currency a year, and with what delight I received my first 15 shilling fee. My hopes were more than realized. I immediately rushed into a lucrative practice." Doubtless, this ready success was due in part to his winning address, and to the charm of a frank, gallant, cordial manner, which was so marked in after life that an eminent and stern political antagonist (Gen. Glascock of Georgia) is said to have refused an introduction to him expressly on the ground of a determination not to be magnetized and mollified by personal contact, as he had known other good haters of the great Kentuckian to be. But Mr. Clay's ready and persistent triumphs at the bar were more adequately accounted for by him, more than 40 years thereafter, in a casual address to a graduating class of law students, as follows: "I owe my success in life to one single fact, namely, that at an early age I commenced, and continued for some years, the practice of daily reading and speaking the contents of some historical or scientific book. These off-hand efforts were sometimes made in a corn-field; at others, in the forest; and not unfrequently in some distant barn, with the horse and ox for my only auditors. It is to this early practice of the art of all arts that I am indebted for the primary and leading impulses that stimulated my progress, and have shaped and moulded my entire destiny." Mr. Clay's first public effort was made in the village debating club; and though its initial blunder of addressing his brother members as "gent
excited a titter of merriment, the for
of his argument called forth gene
and it was spoken of long afterwa
er who lived to listen to the orator's
eulogized public speeches, as superi
them.—Events soon brought the y
conspicuously before his fellow-citiz
ky was on the eve of framing a state
and the question of tolerating or igno
as a permanent institution could
evaded. The sentiment of Washingto
Henry, of Jefferson, of George Maso
all the then eminent civilians of Virg
a policy of gradual emancipation. T
of free labor having been raised by
more eminent clergymen of Ken
Clay enlisted under it. He was ove
ever, by a majority so large as to re
agitation hopeless, and he thenc
silence, except on those rare o
speech seemed to him opportune
to excite needless irritation. One
curred at the anniversary of the Ke
nization society held at Frankfort in
Mr. Clay, then in the zenith of hi
and presidential aspiration, addr
slaveholding audience, said: "
years ago, an attempt was made in u
wealth to adopt a system of gr
tion, similar to that introduced in
in 1780. And among the acts of m
I look back to with most satisfacti
having coöperated with zealous an
friends to procure the establishm
system in this state. We believed t
of good which would be attained
of Kentucky, in a gradual emancip
slaves, would far transcend the
mischief that would result to
Union together, from the gradua
them, and their dispersion and
the United States. We were ov
numbers, and submitted to the de
majority with a grace with which t
in a republic, should ever yield to
sion. I have nevertheless never
never shall cease, to regret a decisio
of which have been to place us in
our neighbors, who are exempt fr
in the state of agriculture, the pr
ufactures, the advance of improve
general prosperity of society." E
speeches before the American col
ciety at Washington treated the
slaves as one characterized by g
hardship, though he uniformly d
condemned any efforts looking to its
violent termination. When, in 184
was on the point of revising and
constitution, Mr. Clay addressed
citizens in a letter, urging the policy
emancipation with colonization. Hi
sonal and political influence proved
ing, however, as his youthful a
quence had done half a c

n was again voted down by a con-
ty.—The great contest between
nu republican parties, which then
convulsed the whole country, deep-
a Kentucky, though her people were
on one side. They had long believed
al interests, especially with regard
n of the Mississippi, neglect-
ally betrayed, by the fed-
u, and many of the leading
suggested an absolute separa-
e region west of the Alleghanies from
thirteen," with a view to the re-
nd other grievances. Spain con-
ower course and mouths of the
r, and it was a current scandal at
of the last century that prominent
f Kentucky had received Spanish gold
for expected services in alienating
rom the Union with an eye to its in-
on into her dominions. Then the peo-
ntucky were nearly all emigrants or
ren of emigrants of the poorer class
ginia, who, for substantial reasons
out of his successful efforts to over-
feudal features of her earlier political
ed Mr. Jefferson with an admira-
t of idolatry. Hence, the alien
cts, and kindred measures of fed-
on, were nowhere more odious than
. The unanimous resolves of her
u d by Jefferson himself, were
of Virginia in the emphasis of
ion of those acts, and in their
t of congress to pass or of the
e them. In this opposition,
fully sympathized; indeed, his elo-
done much to inspire it. It is re-
of the Kentucky popular gatherings
9. that Mr. George Nicholas, who first
d it in reprehension of the alien
laws, was greeted with deafening
acclamations; but when young Clay
in an address far more thrilling and
the popular feeling became too deep
a. and he continued and closed amid
roken silence. Recovered, soon
e spell of his eloquence, the crowd
two speakers on their shoulders, forced
o a carriage, and drew them through
amid thundering acclamations. The
is ovation was not yet 22 years old.
ears afterward, during his absence from
(Fayette), Mr. Clay was elected one
resentatives in the legislature, and
tedly rechosen. During this period,
mployed by an innkeeper to prosecute
t and battery the eminent Col. J. H.
then U. S. district attorney, and in
of the prosecution was led to ani-
n the treatment of his client by Col.
with such severity that the latter chal-
Clay accepted the cartel, and pro-
Frankfort in accordance with it, but
nterposed and settled the quarrel am-
Clay was about this time solicited by Aaron Burr, then in Kentucky, to undertake his defense against the prosecution commenced by Col. Daviess at the instance of President Jefferson, and, on Burr's assurance that he was innocent of all treasonable intent, consented, declining any fee. Burr was acquitted; but Clay, meeting him in New York many years thereafter on his return from Ghent, refused to renew their former intercourse, believing the assurance given by Col. Burr to induce him to undertake his defence a falsehood.—Toward the close of 1806, Mr. Clay was chosen by the legislature of Kentucky to fill a vacancy in the U. S. senate caused by the resignation of Gen. John Adair. His first speech in that body was made to urge the erection of a bridge over the Potomac, opposite Washington city; and he soon after submitted a resolve contemplating an appropriation of public lands to aid the construction of a canal around the falls of the Ohio at Louisville, Ky. On his motion, a special committee was raised to consider the subject, consisting of himself, with Messrs. Giles of Va. and Baldwin of Pa., from which he reported a bill providing for the appointment of commissioners to ascertain and report on the practicability of removing the obstructions at Louisville, which bill passed the senate by a vote of 18 to 8. On the day that this bill passed, Mr. Clay submitted to the senate the following proposition, which was carried with but 3 dissenting votes: "*Resolved*, That the secretary of the treasury be directed to prepare and report to the senate at their next session a plan for the application of such means as are within the power of congress to the purposes of opening roads and making canals; together with a statement of undertakings of that nature which, as objects of public improvement, may require and deserve the aid of government; and also a statement of works of the nature mentioned which have been commenced, the progress made in them, and the means and prospect of their being completed; and all such information as, in the opinion of the secretary, shall be material in relation to the objects of this resolution." This resolve is given in full, not merely as the initiation of an important system of policy, but as an evidence of the fact that, though by turns popular and unpopular, now eulogized as "the great commoner," and now stigmatized as an apostate and a federalist, he cherished from his youth the distinguishing principles which animated his later career.—Mr. Clay's fragment of a term expired with his first session, another having been chosen for the succeeding full term; but he was again chosen in 1807 to the legislature, of which he was, the year following, made speaker. He was here mainly instrumental in defeating a proposition that the common law and all British decisions be henceforth ignored and repudiated in the courts of Kentucky. Four-fifths of the members were understood to have pledged themselves to vote for this bill, yet Mr. Clay's speech in opposition defeated it. In

1809, he made a report on a disputed election case, which was unanimously adopted, and has ever since been held as settling the principle it affirmed—namely, that if A, B, and C are rival candidates for an office, and A, who receives the most votes, proves ineligible, this fact unseats him, yet does not seat B, whose vote was next highest, but creates a vacancy which a new election is required to fill. In Dec. 1808, he made a report approving the leading features of Mr. Jefferson's foreign policy, denouncing the British orders in council, and pledging to the president the enthusiastic support of Kentucky in any probable contingency. These resolves were adopted by a vote of 64 to 1; but Mr. Humphrey Marshall, who alone opposed them, soon after was brought into still more pointed collision with Mr. Clay, by a proposition of the latter that each member of the legislature should clothe himself wholly in fabrics of domestic manufacture. This was stigmatized by Mr. Marshall as the project of a demagogue, with other needlessly harsh and offensive personal epithets, which induced Mr. Clay to challenge his assailant. They met and fired twice at each other, Mr. Marshall being slightly wounded at the former fire, and Mr. Clay at the latter. Their seconds then interfered, and terminated the combat.—At the session of 1809–'10, Mr. Clay again appeared in the U. S. senate, having been elected to fill a vacancy for 2 years, created by the resignation of Mr. Buckner Thurston. His first speech at this session was made in favor of the policy of protection, upon a bill appropriating money for the national defence, one clause of which instructed the secretary of the treasury, in purchasing cordage, sail-cloth, hemp, &c., to give a preference to those of American growth and production. Mr. Lloyd of Massachusetts moved that this direction be stricken out, which Mr. Clay opposed with success. In the course of his speech he observed that, if the argument that we ought not to encourage manufactures because the manufacturing operatives of Europe were subject to great privations, degradations, and miseries, were a sound one, then we ought to discourage and abandon agriculture for a similar reason. His next speech was made in vindication of the justice of President Madison's proclamation, declaring the country lying between the river Perdido and the Mississippi a portion of the Louisiana purchase, and therefore ours, in spite of the adverse claim of Spain to it as belonging to Florida. Mr. Clay's views were of course sustained by congress. On March 26, 1810, he reported the original bill granting preëmptions to settlers on the public lands, which was finally passed. On the 29th, he introduced a bill "to regulate trade and intercourse with the Indian tribes, and to preserve the peace of the frontier," calculated to restrain white cupidity and thus preclude Indian revenge. On April 20, he introduced a bill to enable the territory of Orleans to form a state constitution and government, and be admitted into the Union as the state of Louisiana. At the next session, Mr. Clay was in his seat throughout, but little business of abiding consequence was acted on. The first bank of the United States was now to be rechartered or doomed, and Mr. Clay voted with the great mass of the younger members of his party in favor of its overthrow, making a speech of remarkable vigor and energy against the recharter—a speech which was frequently quoted against him after his change of views evinced in 1816.—On Nov. 3, 1811, the 12th congress was convened a month earlier than usual. Mr. Clay now appeared for the first time as a member of the house, having been chosen by his district to that body at the preceding August election. On the day of his first appearance in the representatives' hall as a member, he was chosen speaker by a large majority, a distinction without parallel since the meeting of the 1st congress. To this house the dominant party had sent, also for the first time, John C. Calhoun of South Carolina, Wm. H. Crawford of Georgia, and Felix Grundy of Tennessee, all young, ardent, ambitious, inspired with hostility to Great Britain, and dissatisfied with the dilatory policy which the administrations of Jefferson and Madison, though proclaiming her treatment of us for years past outrageous and unbearable, had pursued with regard to her. The younger members of the party were fully bent on an early declaration of war, or, failing this, they were prepared to nominate another republican candidate and defeat Mr. Madison's reëlection. Mr. Clay constituted the committees of the house with express reference to an early declaration of war, Peter B. Porter of western New York being made chairman of the committee on foreign relations, backed by a strong majority. On Nov. 29, Mr. Porter reported in favor of an immediate arming of the country, and before the close of Dec. a bill came down from the senate proposing the immediate enlistment of 25,000 men. Of this bill, Mr. Clay was one of the most zealous and effective advocates, leaving the chair for the purpose. It passed Jan. 4, 1812; and on the 22d, Mr. Clay advocated the immediate construction of 10 new frigates. The bill to increase the navy passed the house on the 29th by a large majority; and on April 1, President Madison, who had previously been visited by a committee representing the war majority in congress, to urge him to an early declaration of war, sent to the house a confidential message, proposing an embargo for 60 days. This was denounced with great force by John Randolph of Virginia and Josiah Quincy of Massachusetts, who were replied to with equal energy by Mr. Clay and others. Those were times of fierce excitement, when the war party and peace party in New England town meetings took opposite sides of the meeting-house, and scarcely spoke a civil word to each other throughout the day. High words were of course frequent in congress, Mr. Clay giving and taking his share of them. On June 8, the committee of foreign relations re-

lation that war be declared
in, which had passed both
lose of the 18th, and on the
claration of war was issued by
Congress then adjourned on July
ts of that war do not belong to this
Madison is reported to have at
y contemplated the appointment
as commander-in-chief, but the de-
bandoned. In congress, his voice
were required by the war party, and
given. Armies were to be created,
built and manned, savage tribes to
iated, awed, or crushed, and immense
devoid of fortresses to be protected,
our enemy holding the Canadas and
mistress of the seas, her armaments
ed us at once on every side, over an ex-
e computed by thousands of miles. The
then settled and developed, was
rontier, and a hostile expedition
were expecting and preparing to re-
w York or Baltimore, might first be
as assailing New Orleans, or threaten-
n through Canada by way of Lake
or even Ontario. Meanwhile, the
e scantily supplied with fabrics or the
producing them, and the govern-
edly provided with either cash or
great lakes were to be covered
of which every element but the tim-
be drawn hundreds of miles from
oard, through miry forests, where an
could with difficulty be dragged
m more than 20 miles a day.
gun mounted on the lakes or
res on our part had cost more for mere
tation thither than its value on the sea-
Revenue from imports or public lands
y annihilated by British cruisers on
and Indian hostilities on the other;
ect taxes necessarily imposed were
and partially collected, especially
tes which had been most eager for
; oans were with difficulty negotiated,
ruinous rates; for, brief as was the du-
the struggle, 12 per cents. were only
a heavy discount before its close;
the administration of Mr. Madison,
t had certainly not been eager to em-
the war, and had long rather passively
than stimulated the popular impatience
conflict, was vehemently denounced by
rful opposition, as having wantonly,
plunged the country into hostilities
to retain its hold on power, while the
pecial champions of the war sometimes
l it as but half-hearted and lacking en-
en its inefficiency was in good part at-
le to an absolute deficiency of means.
a Napoleon or a Jackson in the white
have avoided or reversed some of
rs and failures of 1812–'13; but at
of blood and treasure, none can say.
resident could have had a leader of
s more devoted, more unselfish,
more eager to pour the national resources into the conflict, or better calculated to infuse, by the magic of his eloquence, his own ardor and courage into the hearts of his countrymen, than was Henry Clay.—The 13th congress was convened by the president May 24, 1813, more than 6 months in advance of its regular day. Mr. Madison had then been reëlected president over De Witt Clinton, with Elbridge Gerry of Massachusetts for vice-president, after the first doubtful and desperate struggle that the country had experienced since the first election of Mr. Jefferson, 12 years before. The war party were of course predominant in congress, and Mr. Clay was reëlected speaker by a large majority. No effort was omitted on his part to insure and provide for a vigorous prosecution of the war. But in the Sept. preceding, the emperor Alexander I. of Russia having intimated to Mr. J. Q. Adams, then our minister at St. Petersburg, his desire to mediate between the United States and Great Britain, his proposition was favorably received, and in March, 1813, M. Daschkoff, his minister at Washington, formally tendered the mediation of Russia, which Mr. Madison accepted. It was rejected by Great Britain, however, for the substantial reason that, though Russia was her ally in the war against France, then raging, her views of the grave questions of maritime law and neutral rights on which we were at issue, and her interests with regard to the settlement of those questions, were notoriously in consonance with ours. The British ministry offered, in lieu of accepting the Russian proposition, to open negotiations for peace directly with the United States. This proffer was in turn readily embraced by Mr. Madison, who designated Albert Gallatin (his secretary of the treasury) and James A. Bayard (a leading federalist) as associates with Mr. Adams in the proposed negotiations. Mr. Clay and Jonathan Russell were added after the negotiations had been fully and formally agreed on. On Jan. 19, 1814, Mr. Clay resigned the speakership and his seat in order to sail for Europe as a peacemaker. Notwithstanding the intensity of party feeling, of which congress was the focus, but 9 votes were recorded against the resolution of thanks for his ability and impartiality as speaker, which was now proposed and adopted. Gottenburg in Sweden had been proposed by Great Britain as the place of meeting for the plenipotentiaries, but, soon after their assembling, Ghent in Belgium was substituted by mutual consent. Mr. Goulbourn and Lord Gambier were the ostensible plenipotentiaries of Great Britain; but as they, on receiving any important note from our commissioners, immediately transmitted it by express to London, and awaited instructions before submitting their answer, our envoys had in effect the whole British ministry to deal with. The negotiation was thus protracted nearly through the latter half of 1814, even after Napoleon was dethroned and consigned to Elba, leaving all Europe at peace with Great Britain, and the United States her only remain-

ing antagonist. It was difficult for the British commissioners to regard this country otherwise than as an ally of the fallen despot and involved in his overthrow; and the earlier pretensions on that side banished from the minds of our negotiators all but the faintest hopes of an accommodation. Their impressions were of course freely communicated to their own government; and, after the negotiations had assumed a more auspicious phase, the latter were surprised by the appearance in the journals of their confidential letters of advice to the cabinet at Washington, freely expressing their belief that the negotiation would end in nothing. The cabinet, presuming that the conference would have broken up before these letters could reach Europe in the journals, had published them in order to nerve the country for a vigorous prosecution of the war. Mr. Clay went immediately to a public ball, where he met the British commissioners, and addressed them severally in explanation of the untoward publication and in deprecation of any resentment which it might have excited. Evident irritation at the circumstance was evinced by the British plenipotentiaries for some days thereafter, but no allusion was made to it after that evening, and the negotiation proceeded as if no such *contretemps* had happened. During one of the pauses in the negotiation, while the British envoys were communicating with London, Mr. Clay went to Brussels, where his rueful servant handed him, with Mr. Goulbourn's compliments, a file of British papers containing accounts of the capture of Washington city, the flight of President Madison, burning of the capitol, &c., &c. Mr. Clay soothed his downcast servant as well as he could, returned thanks for Mr. Goulbourn's courtesy, but took occasion soon after to transmit to the British commissioners, in illustration of a point then in controversy, a file of American papers, containing accounts of Gen. Macomb's recent victory over Sir George Provost near Plattsburg, the flight of the latter, and the utter destruction by Com. McDonough of the British fleet on Lake Champlain. This is but a specimen of the encounters and repartees which enlivened that tedious negotiation. The British required, as conditions of peace: 1, indemnity and security for their Indian allies within the geographical limits of the United States; 2, the free navigation of the Mississippi; 3, the relinquishment of the fishing rights or privileges guaranteed to us by the treaty of independence. On the other hand, the American commissioners desired a disavowal by Great Britain of all right to search American vessels at sea, or to impress anywhere Americans to serve in her navy. The orders in council, which had been one main original cause of hostilities, had been in fact repealed before war was declared, though this fact was not then known nor suspected in Washington; had they not been formally withdrawn, the general pacification of Europe would have already deprived them of all force or significance. The British negotiators regarded the fishing
the coast of British America, acco
1783, in the light of concessions w
since declared by the United State
nated, and which it rested with th
or withhold; the Americans, on the
insisted that the peace of Paris was
partition of an empire, of which
would thereafter retain its allotm
different adjustment was agreed o
them. But the same treaty of Pa
ated or defined our rights in the fis
lated that the navigation of the
should be free to Great Britain fo
Jay's celebrated treaty (1794-'5)
stipulation. If, then, the British de
regard to the fisheries were uphel
operate to cut off her right to naviga
sissippi, and *vice versa*. Messrs. Ada
and Gallatin wished to propose a
of the American fishing privileges
ish navigation of the Mississippi. w
Clay and Russell strenuously oppose
long discussion, Mr. Clay announced
leagues that he would in no case affi
ture to a treaty that conceded again to
ain the free navigation of the Missis
Bayard thereupon changed sides, ma
jority adverse to the proposal, and it w
Afterward, the British having dem
newal of their right to navigate the
the three American commissioners
vorable to the proposal above state
concede it on condition that our for
privileges were conceded on the other
Clay, unwilling to seem dictatorial, n
this to pass without objection; but
commissioners rejected it; so that
sought by Mr. Clay was attained in
of the Mississippi from all special
the part of Great Britain.—Mr. Clay
Paris after the signing of the treaty
spent some weeks, leaving for Londo
1815, just previous to the return of
from Elba. One of his happi
made during his stay in Paris, to M
who, on being introduced to him
"Ah, Mr. Clay! I have been in
have been defending your cause there.
it, madame; we heard of your power
sition, and are grateful for it." "The
much enraged against you," continue
much so that they at one time thoug
of sending the duke of Wellington
"I am very sorry, madame, that t
send his grace." "Why so?" "B
dame, if he had beaten us, we should
been in the condition of all Europe, a
out disgrace; whereas if we had
we must have greatly added to the
our arms." Arriving in London in
his colleagues, Mr. Clay was received
cordiality by the most distinguished
parties, especially by the premier, L
reagh, as also by Lord Gambier.
day with his colleagues and the

Castlereagh's, Napoleon's second abdi- and flight became the topic of conversa- and, among other conjectures as to his sed destination, it was supposed that have sailed for the United States. [illegible] not make you a great deal of trouble he reach your country?" inquired Lord pool of Mr. Clay. "Not the least, my" promptly responded the latter; "we shall [illegible] d to receive him, shall treat him with ity, and very soon make him a good [illegible]." This response elicited a burst of from all present. One of Mr. Clay's friends took the American commis- [illegible] visit an aged nobleman, formerly [illegible] e. whom years and infirmities had [illegible]d to r[illegible] rement from active duties, but [illegible] in public affairs and public men [illegible] ated. They spent a pleasant, ani- vening, and the friend who introduced Americans, calling next morning on the [illegible], inquired what impression they had made [illegible] "Oh! a delightful one," responded the octogenarian; "I was very glad of opportunity to know and converse with but I liked the Kentucky man best." as the general verdict.—Mr. Clay reached [illegible] York on his return in Sept. 1815, and was welcomed. Proceeding to Kentucky, entertained by his old neighbors and with a public dinner at Lexington, Oct. [illegible] had already been reëlected to congress t opposition, but, there being some cavil the legality of such election in his ab- rom the country, he resigned, and was lected in like manner. On the opening of he was chosen speaker (Dec. 4, 1815) serious competition. On this congress 4th) devolved the labor of laying afresh ases of a policy adapted to a state of peace, wo predecessors having been absorbed by and duties peculiar to a state of war. 's influence was exerted in behalf of [illegible] tion of domestic industry, through [illegible] ment of American manufactures development of the national resources [illegible] of internal improvements. But on a on—that of a national bank—he frankly avowed that his views had been changed by the disastrous financial experiences of the late war—that he was now as decidedly favorable to such an establishment as he had formerly been hostile to it. The bill chartering the 2d United States bank accordingly passed the house (March 14, 1816) by a vote of 80 yeas to 71 nays, and was concurred in by the senate (April 2) by 22 yeas to 12 nays; most of the federalists voting in the minority for reasons than those of radical hostility to the mea- Certain amendments of the senate were d in by the house, and the bill became law by President Madison's approval, April 10. Many who concurred with Mr. Clay in his change of views on this subject afterward changed back again, but he remained an advocate of a national bank to the last.—In the tariff of 1816, the foundations of a protective policy, especially with regard to fabrics of cotton, were relaid, with Mr. Clay's hearty approval; but the credit of originating and more prominently defending that measure, especially in its protective features, is due to Mr. Calhoun. The bank question is often cited as the only important topic on which Mr. Clay's early impressions with regard to a true national policy were essentially changed. It should be noted that he, though among the earliest, most vehement and persistent advocates of the war of 1812, was never, during his 40 years of subsequent public service, the prompter, adviser, or champion of any war whatever, but uniformly and earnestly resisted every incitement to hostilities, and counselled moderation, forbearance, contentment with our existing boundaries, and the preservation of peace.—Mr. Clay, throughout his long and eminent career in the house, of which he was speaker nearly or quite all the time that he held a seat in it, was never the nominee of a caucus or convention, and never but once subjected to a serious contest for his seat. This was at the close of this 14th congress, which had passed a bill reported by Col. Richard M. Johnson of Ky., which substituted for the existing stipend of $8 per day to each member of congress an annual salary of $1,500. The country, exhausted by the devastations and sacrifices of the late war, with its industry and trade paralyzed by the glutted markets consequent on the enormous exportations of British fabrics to our ports on the return of peace, received this change with general indignation. Many eminent members lost their seats, never to regain them. Mr. Clay's was for a time in danger. An able and skilful competitor presented himself in the person of John Pope (afterward appointed governor of Arkansas by Gen. Jackson), who was nearly Mr. Clay's equal on the stump, and more than his match in the arts by which votes are secured. He labored, however, under the disadvantage of being a federalist, while the district had ever been overwhelmingly republican. The canvass was very animated, the candidates addressing the people alternately from the same platform. Mr. Clay was reëlected by some 600 majority. He never again had a competitor until he finally retired from the house on accepting the post of secretary of state, under Mr. Adams, in March, 1825. Some of the anecdotes told of his canvass against Mr. Pope are worth preserving. In one instance he encountered an old hunter, always his zealous supporter, but who now frankly told him that he should do his best for his antagonist, because of the detested compensation bill. "My friend," inquired Mr. Clay, "have you a good rifle?" "Yes." "Did it ever flash?" "Only once." "What then, did you throw it away?" "No, I picked the flint and tried it again." "Did I ever flash but on the compensation bill?" "No." "Will you throw me away?" "No, no," responded the hunter, "I will try you again." He was thenceforth as ardent a Clay

man as ever before. But the hits were not all on one side. An Irish barber in Lexington, Jerry Murphy by name, who had previously been zealous for Clay, was now observed to maintain an ominous silence. One of Mr. Clay's friends undertook, a few days before the election, to bring him out on the right side. Jerry listened, but said nothing, until his friend urged him to state frankly for whom he should vote. "I tell you what, docthur," responded the barber, "I mane to vote for the man that can put but one hand into the threasury." (Mr. Pope had lost an arm some years before.) The house, Mr. Clay included, at the ensuing session made all possible haste to repeal the compensation bill and return to $8 per day.—A bill appropriating the bonus paid by the new U. S. bank for its charter to the prosecution of internal improvements, was passed at this session, but vetoed by President Madison, to Mr. Clay's regret, whose zeal in the cause of internal improvements placed him, for some years following the close of the war, in an attitude of *quasi* opposition to the federal administrations of whose general policy he was a cordial supporter. Notwithstanding this diversity of views, Mr. Madison tendered him successively the Russian embassy and a seat in his cabinet, both of which were declined.—Mr. Monroe became president March 4, 1817. The condition of Spanish America soon attracted public attention. We had serious and threatening differences with Spain, ultimately settled by the treaty which gave us Florida, negotiated in 1820. Spain had nearly lost her foothold on the continent of America. Mr. Clay and other influential members of congress were eager for the prompt recognition of the revolted Spanish colonies as independent states, which Mr. Monroe and his cabinet resisted. Mr. Clay's speeches in vindication of the South American patriots, and in advocacy of their immediate recognition as free and independent, are among his noblest congressional efforts. That of 1818 was read (in translation) to the patriot armies, by direction of Bolivar, to strengthen their confidence, and animate them to fresh exertions. Finally, on Mr. Clay's motion, and after a strong debate, in which he bore a leading part, the house (Feb. 1821) passed two resolves, the first expressing the sympathy felt by the people of the United States for the struggling patriots of South America; the second tendering to the president assurances of the support of the house in the recognition of South American independence, whenever he should deem that step advisable. The second resolution was strongly opposed, but carried by a vote of 87 to 68. Mr. Clay immediately moved that a committee of two be appointed to present these resolves to the president, which prevailed, and he was made its chairman. The duty was of course courteously discharged, though the resolves had been opposed by the more devoted friends of the administration, and even denounced as insulting to the president. Mr. Monroe, however, yielded to the popular pressure, and on March 8, 1822, sent a message rec
the recognition of South America
ence. The committee on foreign rel
ported favorably on the 19th, and on
the house voted that the independ
Spanish American states be rec
but a single voice in the negative.
letter of thanks to Mr. Clay says: "
ica, Colombia, and myself, owe y
our purest gratitude for the incom
vices you have rendered us, by su
cause with a sublime enthusiasm." S
1826-'7 the South American republi
the United States to unite with them
in a congress of plenipotentiaries t
measures of common security and
Mr. Clay, then secretary of state, acc
acted upon the invitation with a
which exposed him and Mr. Adams
censure from the opposition, then do
the senate.—In 1820, a bill remodelling
of 1816, and increasing the duties
fabrics, passed the house by a small
but failed in the senate by a still cl
Mr. Clay, addressing the house in its f
"I frankly own that I feel great soli
the success of this bill. The entire
ence of my country on all foreign
respects the supply of our essential
ever been with me a favorite object.
of our revolution effected our politica
pation. The last war contributed grea
accomplishing our commercial freed
our complete independence will only b
mated after the policy of this bill
been recognized and adopted. We
deed, great obstacles to contend with
its, colonial usages, the enormous pr
foreign trade prosecuted under favo
cumstances which no longer contin
I will not despair. The cause, I veril
is the cause of my country. It may
poned; it may be frustrated for the
but it will finally prevail." A tari
to that defeated in 1820 was final
in 1824, after a doubtful struggle, the
house standing 107 to 102.—The Mis
tion agitated the country throughout
Missouri formed a part of Louisiana
latter was ceded to us by France, and sl
long existed in and about St. Louis,
tinued to exist under the territorial go
and when, in 1818, Missouri applied
sion as a state, she did so under a
stitution. This was objected to, not o
federalists from the eastern and mid
but by most of the republican mem
the free states also. Weariness of "th
dynasty," as the succession of presid
1800 began to be termed, had probably
in stirring up this resistance, but hostilit
ry had doubtless much more. Nearly all
sylvania delegation voted with the re
ists. The senate repeatedly voted
Missouri under her slave constitutio
house refused to concur, and demand

As speech after speech was
vote taken, the temper
her in congress or in the
warmer and warmer.
of the most animated and elab-
against the proposed restriction.
question, he experienced heavy pe-
which caused him, at the opening
of 1820, to resign the speakership,
to resign his seat, and devote him-
fession, in the hope of retrieving
He was persuaded, however, to
of the lowering aspect of this
versy, and took his seat Jan. 16,
the antagonism of the two
brought the business of legislation
It seemed scarcely possible that
be persuaded to recede. But Mr.
2, moved a reference by the house
to a select committee of 13,
and he became its chairman.
10 he reported from a majority of that
a compromise, so called, which pro-
admission of Missouri under her
on, on condition that she should
the migration to, or settlement
borders of any persons "who now
after become, citizens of any of
Union." This proposition was
close vote of 83 to 80; but Mr.
aged, now proposed a joint com-
ence from both houses, which
due season reported what was
Clay's project, which passed
vote of 87 to 81, and was readily
by the senate, which had pro-
eed at the preceding session
ation of the admission of Mis-
state, slavery should in all the
tories of the United States, N. of
(the southern boundary of Missouri),
er prohibited. Thus was the Missouri
settled, and an agitation that threat-
stability of the Union thereupon grad-
sided.—Mr. Clay declined to be re-
for the following congress, and Mr.
Barbour of Virginia was chosen its
But having, meantime, repaired his
fortunes, he was, in 1823, again a
for the house, and again elected; and
earance in his seat he was recho-
receiving 139 votes to 42 for Mr.
He now warmly seconded the efforts
bster and others, in favor of the re-
of insurgent Greece as an independent
prevailed.—Lafayette's visit oc-
the year 1824, and the duty of
him to the floor of the house de-
course on its speaker. The two were
friends and mutual admirers; and La-
explicit averment that Mr. Clay had
assured him, some time before the con-
occurred, that if he should be required
between Adams and Jackson as can-
president, he must choose the former,
carried conviction to some minds that would have been impregnable to ordinary testimony.—The presidential election of 1824 found Mr. Clay numbered among the candidates. He had been first nominated in 1822 by the legislature of Kentucky, backed by similar nominations in Louisiana, Missouri, and Ohio. Symptoms of a general dissolution of parties had for some time been manifest. The Virginia line of revolutionary patriots had been exhausted. The caucus machinery by which republican candidates for president and vice-president were selected had broken down; a large majority of the members of the existing congress having authorized a committee to state that they were opposed to holding a caucus, and should not be governed by its decisions. Nevertheless, a caucus was called, and attended by less than one-third of the members, who nominated William H. Crawford of Georgia (then secretary of the treasury) for president, with Albert Gallatin of Pennsylvania for vice-president. The friends of all the rival candidates scouted this nomination, and, where it seemed necessary, they generally united on common electoral candidates to defeat it. North Carolina and New Jersey were thus carried against Crawford with electoral candidates largely supported by friends of Adams, though the electoral votes were unanimously cast for Jackson. New York, by a like combination, but in a somewhat different manner, was carried against Crawford, most of her electors casting their votes for Adams. To beat the caucus candidates and their supporters was, with most of the voters, the paramount consideration. Thus Mr. Crawford's electoral vote was kept down to 41, though his position in the canvass was most prominent, and Gen. Jackson's electoral vote carried up to 99, though by a majority of the voters he was not supposed a formidable candidate, if seriously a candidate at all. Mr. Adams had 84 votes, 51 from New England, 25 from New York, and the residue mainly from Maryland; Mr. Clay received the votes of Ohio, Kentucky, and Missouri, with 4 only from New York—37 in all, which by no means indicated his full strength with the people or in the canvass. The election thus devolved on the house, whose choice being limited by the constitution to the 3 highest candidates, Mr. Clay was thrown out. Had he received 6 more electoral votes, which his strength in New York was expected to have given him, he could hardly have failed of an election, his popularity in the body over which he then presided being unrivalled. As it was, he had cast upon him the invidious duty of choosing among his 3 rivals, with none of whom was he on terms of intimacy or cordiality; one of them (Mr. Crawford) then prostrated by a disease which proved fatal not long afterward; the next (Mr. Adams) estranged from him by a difference of views developed at Ghent, and some controversy thence arising; the last (Gen. Jackson), one with whom he had for years been on terms far from cordial, growing out of the general's invasion and subjugation of Florida, which Mr. Clay

had arraigned in the most severe terms. In fact, Mr. Clay had described Gen. Jackson's conduct as proving him a military despot, utterly unfit to hold office in a land of liberty and law. His choice, therefore, embarrassing as was the emergency, ought not to have been doubtful, and probably was not in the minds of intelligent observers. He gave his voice in favor of John Quincy Adams, who was chosen by the votes of 18 out of the 24 states, the vote of each state being cast by a majority of its delegation, and Delaware or Illinois with a single member having equal weight in the decision with New York or Pennsylvania. Nearly all Mr. Clay's intimate friends seconded his preference of Mr. Adams, while Col. Benton, of Missouri, proved a conspicuous exception. Though he had formerly been at enmity with Gen. Jackson, and had supported Mr. Clay as peculiarly the man for the West, because of his championship of protection and internal improvement, he revolted at the support of Mr. Adams, and was thenceforth a devoted and effective supporter of Gen. Jackson.—So soon as it became generally known or surmised that Mr. Clay would prefer Mr. Adams, a shout of "Bargain and corruption!" was raised by those whom that choice disappointed and thwarted. Mr. George Kremer, a representative from Pennsylvania, became the avowed accuser of Mr. Clay. Mr. James Buchanan, who had personally labored with some of Mr. Clay's devoted friends to induce a decision in favor of Gen. Jackson, urging that this would open the way for Mr. Clay's accession to the first place in the cabinet, was in due time designated by Gen. Jackson himself as one who could testify that the Clay men had made indirect overtures to him in behalf of their leader; but Mr. Buchanan, thus called on, replied that Gen. Jackson had misunderstood him—he had no such knowledge as was supposed by Gen. J. In fact, there was no evidence of any offers to bargain on the part of Mr. Clay, because no such offers had been made. But while Mr. Adams undoubtedly did right in offering, upon his election, the first place in his cabinet to Mr. Clay, its acceptance by the latter was injudicious, and Mr. Clay himself perceived this when too late. In a speech at Lexington, Ky., Sept. 9, 1842, he said: "My error in accepting the office arose out of my underrating the power of detraction and the force of ignorance, and abiding with too sure a confidence in the conscious integrity and uprightness of my own motives." It is at all events certain that Mr. Clay was never thereafter the undoubted popular favorite that he had previously been. The violence of defamation, wherewith he was assailed with charges of "bargain and corruption," would seem to have surprised as well as intensely annoyed him. In his "card" denouncing the authors of that calumny, and daring them to come out into the light of day, he intimated that he was ready to meet them in the so-called "field of honor." In his "Letter to my Constituents," which appeared soon after, he said: "I
have put in it (the card) that
because, though it does not ne
the resort to a personal comba
that construction; nor will I con
possible issue was within my cont
owe it to the community to say,
I may have heretofore done, or,
circumstances, might be forced to
it holds in deeper abhorrence t
pernicious practice. Condemned
by the judgment and philosophy
ing of the religion, of every thi
is an affair of feeling, about whi
though we should, reason. Its t
will be found when all shall unit
to unite, in its unqualified pro
happily, this is a matter in whic
but a little way when contradicte
When the famous and eccentric J
who had been in antagonism
ever since the latter entered t
whose hostility had been embit
election of Mr. Adams, in speech
heaped offensive epithets and d
tations on the man who had
promoted that election, stigm
"coalition of puritan with blac
demanded explanations, which
and the refusal was followed b
which Mr. Randolph accepted.
met, April 8, 1826, and excha
without effect, when, Mr. Rand
clared that he would not fire at
duel was terminated by the second
remained unreconciled, however,
longer, when Mr. Randolph, on th
grave, was carried to the senate,
on purpose to hear once mor
voice. Mr. Clay was speaking
compromise, and, when he c
immediately to the dying Vi
changed cordial salutations.—O
drawn up by Mr. Clay during
that he presided over the depart
we may particularly mention his
the U. S. ministers to the propo
Panama; his letter to the U. S.
Petersburg, setting forth the
which should induce Russia to ex
ence in favor of the recognition
South American independence; h
minister at London, showing the
American claim to the free na
St. Lawrence; his despatches r
north-eastern boundary, and to t
the British West Indies.—Mr. A
tion having been defeated,
with him, March 4, 1829. He se
for Kentucky 10 days afterwa
warmly welcomed at a public
by his old neighbors and friends.
dressed spontaneous assemblages
Md., and Wheeling, Va., on his
ney. Remaining in retir nt
married daughter at New

ed there, as also at
ovation. Returning to
he next summer visited
and was in like manner wel-
innati and Columbus. His re-
nn as at Wheeling the year
d exposition and defence of
system." He meantime re-
n until Dec. 1831, when, hav-
U. S. senator, by a majority of 9
er Col. Richard M. Johnson, he again
eat in that body, to which he had bid-
well 20 years before. Almost simul-
with his appearance at Washington
of "national republicans," held at
ed him, Dec. 12, as a candi-
lent, with John Sergeant of
for vice-president. His position
was now a difficult one. His de-
onists had a majority in both
could present whatever measures
in h shape as to them seemed
compelling him thus to
in opposition to local interests
prejudices, while he had no corre-
power to apply tests to them or their
that session, nearly every question of
lic policy was brought up and acted on.
bank applied for a recharter through
las, then a Jackson senator from
afterward vice-president under
l the bill, supported by Mr. Clay
itical friends, passed both
majorities, but was vetoed
A revision of the protective
with a view to the reduction of
was vehemently demanded on the
h Carolina; but, though this con-
ongly Jacksonian, Mr. Clay carried
on this question also, speaking re-
and exhaustively in exposition and de-
protective policy, and so shaping
that the free list was beneficially
the reductions on articles still sub-
were so made as not to expose
interest to a ruinous foreign com-
inally, several propositions looking
of the minimum price ($1 25 per
public lands having been submitted
e, the whole subject was referred to
tee on manufactures, of which Mr.
made chairman, with the obvi-
of obliging him to provoke hos-
at the east by consenting, or at the
, to give the lands to the states,
individuals at a nominal price.
not seek to evade this responsibili-
n three weeks submitted to the senate
wherein he treated the subject with
serve, and proposed, instead of the
jects referred to him, an original pub-
system, whose leading features are as
1. The lands to remain under the con-
federal government, to be surveyed
by its officers, and without alteration
to purchasers. 2. Of the proceeds of all sales, 12½ per cent to be annually paid over to the states respectively in which such sales were made, to be by them devoted to the promotion of education and internal improvement. 3. The residue of the proceeds to be apportioned among and paid over to all the states according to their federal population respectively, to be by them devoted to purposes of education, internal improvement, or colonization. 4. Not less than $30,000 in each year to be expended in extending the surveys; a certain percentage of the lands still public in the new states to be granted them for purposes of internal improvement; and this act, unless in case of war, to continue in force for 5 years, so as to give its provisions a fair trial. Such, in substance, was Mr. Clay's plan. It was never adopted, or only adopted in 1841 with a condition proposed by Mr. Berrien of Ga., that it should be suspended upon any increase of customs duties above 20 per cent., which soon after rendered it inoperative; but it certainly did not diminish Mr. Clay's popularity, nor weaken the confidence reposed in him by that large portion of the American people who regarded him as their country's foremost statesman.—Here, on the threshold of the second presidential canvass in which Mr. Clay's name was before the people as a candidate for their highest trust, it may be proper to introduce that terse and celebrated statement of his principles and his qualifications which was originally addressed, Oct. 22, 1824, by Col. Thomas H. Benton and other leading Missourians to their fellow-citizens, in advocacy of their choice. They said: "The principles which would govern Mr. Clay's administration, should he be elected, are well known to the nation. They have been displayed upon the floor of congress for the last 17 years. They constitute a system of American policy based upon the agriculture and manufactures of our own country; upon interior as well as foreign commerce; upon internal as well as seaboard improvement; upon the independence of the new world, and close commercial alliances with Mexico and South America. It is said that others would pursue the same system; we answer that the founder of a system is the natural executor of his own work; that the most efficient protector of American iron, lead, hemp, wool, and cotton, would be the triumphant champion of the new tariff; the safest friend to interior commerce would be the statesman who has proclaimed the Mississippi to be the sea of the West; the most zealous promoter of internal improvement would be the president who has triumphed over the president who opposed the construction of national roads and canals; the most successful applicant for treaties with Mexico and South America would be the eloquent advocate of their own independence." It was decreed that the justice of these reasonable anticipations should never be verified. The election of 1832 occurred under circumstances most unfavorable to Mr. Clay. Gen. Jackson was in the white house, wielding a political patronage unprece-

dented in amount. His military achievements, his moral courage, his decision of character, had rendered him personally popular beyond any man since Jefferson, if not since Washington. His recent veto of the bank recharter had unquestionably heightened that popularity. The country, under the impulse of the tariffs of 1824 and 1828, was prosperous beyond precedent, hence averse to political change. The slave states, except Kentucky, Maryland, and Delaware, had almost unanimously supported the general's election, and were even more unanimous in favor of his reelection. The old "bargain and corruption" slander still rankled in the minds of thousands. The opposition was distracted by anti-masonry, which had brought about the nomination of William Wirt of Maryland for president, and Amos Ellmaker of Pennsylvania for vice-president, with electoral candidates in most of the free states, and which actually carried Vermont, the strongest anti-Jackson state in the union, Massachusetts excepted. Gen. Jackson was of course elected by a large popular and larger electoral majority; Mr. Clay receiving the votes only of Massachusetts, Rhode Island, Connecticut, Delaware, Maryland, and Kentucky. New York, New Jersey, and Ohio went for Jackson by small majorities; Pennsylvania by about half that she had given against Adams 4 years before. The triumph was decisive.—The election was scarcely over when a new political excitement was created by the action of South Carolina. That state, under Mr. Calhoun's lead, had refused again to support Gen. Jackson, casting her electoral votes for Gov. Floyd of Virginia. She professed an intense dissatisfaction with the tariff just enacted, by which the revenue had been reduced while the policy of protection was preserved. She assembled a convention, and thereby assumed to nullify the tariff, so far at least as she was concerned, and to interdict its further enforcement within her borders. Gen. Jackson despatched Gen. Scott to Charleston to support the collection of the revenue, and launched against the nullifiers a proclamation of remarkable vigor, taking the broadest ground of hostility against the power of a state to nullify an act of congress, or effectively pronounce it invalid. A collision of federal and state authority was imminent. In the midst of the excitement thus engendered congress met, and Mr. Verplanck, chairman of the house committee of ways and means, introduced a bill proposing a sweeping and radical reduction of the tariff, so as to divest it of every lineament of protection. It seemed probable that the United States were about to be plunged into a bloody civil war on account of a system which was to be almost simultaneously abandoned. Such were the circumstances under which Mr. Clay proposed, early in the session of 1832–'3, his tariff compromise. Its leading features were: 1, submission to the necessity of a radical reduction of the tariff; and 2, to have the change effected so slowly and gradually that our manufacturers
might, it was hoped, adapt themselve
bear up against it. To this end, the
vided for an ultimate reduction of a
then ranging above 20 per cent. to t
rate, but only $\frac{1}{10}$ of the excess was
ducted annually, so that the last in
would only take effect in 1842. This
tion was accepted by the nullifiers
from an opponent of the president;
cepted by the manufacturers, who
preferred a future to a present disaste
pelled to choose between them, and w
that something might intervene to pre
dreaded crash; it was accepted by con
the country. Mr. Clay's bill, though
by Mr. Webster, and not favored by G
son, passed both houses by large majo
the house, 120 to 84; in the senate,
—The country was now at peace, bu
ments were soon lashed into fury by G
son's removal of the treasury deposi
1833) from the U. S. bank into the c
keeping of certain selected state banks.
cumstances under which this change w
ed were extraordinary. Just before
ceding adjournment of congress, it w
pered that such a step was meditated
upon the house, by a vote of 109 to 46,
its decided conviction that the deposit
remain where the law had placed the
power to remove them rested not in
ident, but in the secretary of the tre
that officer (William J. Duane), wh
give the order, first hesitated and finally
He was thereupon removed, and Roger
(now chief justice) appointed in his ste
Taney, of course, did what the presiden
The act was widely condemned, as p
vesting in the president a dangerous c
the public purse. Soon after the ass
the new congress, Mr. Clay (Dec. 26,
mitted to the senate the following prop
"1. *Resolved*, That, by dismissing the
tary of the treasury, because he woul
trary to his sense of his own duty, r
money of the United States, in depo
bank of the United States and its bra
conformity with the president's opi
appointing his successor to effect su
which has been done, the president has
the exercise of a power over the
the United States not granted to
constitution and laws, and danger
erties of the people. 2. *Resolved*,
sons assigned by the secretary of the
for the removal of the money of th
States deposited in the United States
its branches, communicated to co
3d day of Dec. 1833, are unsatisfac
sufficient." These resolutions Mr. Cl
cated with energy and eloquence, and
was finally adopted (March 21, 1834):
nays 18. Two resolves proposing a re
of the deposits in accordance with this
submitted by Mr. Clay, and adopted by
ate, but defeated in the house. Mr. Clay

, modified his first resolve
[illegible] as follows: "*Resolved*,
[illegible] in his late proceedings in
the pu[illegible] revenue, has assumed upon
hority and power not conferred by
ion and laws, but in derogation of
[illegible] this shape it was adopted by the
vote: Yeas—Messrs. Bibb, Black, Cal-
, Clayton, Ewing, Frelinghuysen, Kent,
eigh, Mangum, Naudain, Poindexter,
Prentiss, Preston, Robbins, Silsbee,
uthard, Sprague, Swift, Tomlinson,
ggaman, Webster—26. Nays—Messrs.
rown, Forsyth, Grundy, Hendricks,
. King of Ala., King of Ga., Linn,
ore, Morris, Robinson, Shepley, Tall-
on. hite, Wilkins, Wright—20.
by Gen. Jackson with his cel-
[illegible] which he claimed absolute
r his subordinates in the executive
[illegible] of the government. The senate, on
. Poindexter, by a vote of 27 to
place this protest on its journal.
thereafter, a resolution, moved by
, proposing to expunge from the
[illegible] senate the record of its vote of
Jackson's removal of the depos-
. Clay present, and opposing
[illegible] his wonted fire.—At the ses-
-'35, a difficulty with France fitly en-
ttention. France owed us a con-
for spoliations on our commerce
of Bonaparte, for which no repara-
made. The government of Louis
[illegible] in 1831 to make such reparation
5,000,000, and a bill for that pur-
tted by the ministry to the cham-
in the chamber of deputies by a
[illegible] votes; consequently, a draft drawn
. S. government on the French treas-
first instalment of the stipulated in-
returned protested. Great irrita-
followed, and Gen. Jackson, in his
[illegible] Dec. 1834, proposed that congress
ze him to secure the required
[illegible] reprisals on French property; a
would be in effect a declaration of
[illegible] proposition was referred by the senate
ttee on foreign affairs, of which
was chairman; and he (Jan. 6, 1835)
report thereon, affirming the justice
ims, but insisting that the failure to
been unintentional on the part of the
y; that the hope of favorable
[illegible] yet extinct; and that hence we
[illegible] justified in resorting to the expe-
forcible reprisals recommended by
ent. These views were promptly
by Messrs. Calhoun, Poindexter, and
ng senators; and it was unanimously
r legislation at this time with
[illegible] relations with France was inex-
Thus the passions of the nation were
the French government, which, on
of Gen. Jackson's message, had recall-
dor, and tendered his passports to
ours, was enabled to renew friendly relations. The requisite legislation was procured, the stipulated indemnity paid, and the former amity between the two nations restored.—An eloquent speech in favor of a policy of uniform kindness and justice toward the Indian tribes within our borders, and another urging a limitation and reduction of the power and patronage of the president, were made by Mr. Clay at this session.—At the session of 1835-'6, Mr. Clay's land bill, which had once been vetoed by Gen. Jackson, was again presented and advocated by him, and passed the senate, May 4, 1836, by a vote of 25 to 20. It failed, however, in the house.—The right of petition was brought prominently before congress and the country at this session. Mr. Buchanan of Pa. (Jan. 11, 1836) presented the memorial of an association of Christian Friends in his own state, praying congress to abolish slavery and the slave trade in the district of Columbia. Mr. Buchanan moved that the memorial be read, and its prayer thereupon rejected. Mr. Calhoun objected to the reception of the memorial. Mr. Clay opposed both this and Mr. Buchanan's motion peremptorily to reject, maintaining that the right to do what the petitioners asked inhered in congress, though he deemed its exercise inexpedient. He maintained the right of petition, and held that congress should receive and consider a memorial of this kind, giving reasons for denying its prayer. The senate thereupon voted to receive the memorial—yeas 36, nays 10—whereupon Mr. Clay moved to amend Mr. Buchanan's motion by a succinct statement of the reasons for rejection. This statement proved unsatisfactory to the southern senators, and the whole subject was laid on the table by a vote of 24 to 20. Mr. Clay made, at this session, a speech on the keeping of the public moneys, then distributed among certain favorite state banks, thence termed the "pet banks." He argued the unsoundness of the system, the flimsiness of the securities and safeguards relied on by the secretary of the treasury (who had just reported, March 17, 1836, that all was as it should be), and insisted that a failure of the cotton crop, or any occurrence which should create a necessity for large exportations of specie to Europe, would compel a general contraction of loans, and a consequent panic and crash, in which the public moneys would disappear or become unavailable. To the superficial observer, nothing seemed less probable than this anticipation, the whole country being then in a high tide of seeming prosperity; yet a little more than a year saw his worst apprehensions fully realized. On June 8, Mr. Clay, from the committee on foreign affairs, reported in favor of recognizing the independence of Texas, whenever satisfactory evidence should be received that she had a civil government in successful operation. The proposition, somewhat modified, passed both houses without opposition. In the autumn of that year, he was chosen president of the American colonization society,. in place of Presi-

dent Madison, recently deceased. During the winter following, he was reëlected to the U. S. senate, receiving 76 votes to 54 for James Guthrie, the administration candidate. In the autumn of 1836, Mr. Van Buren had been elected president, with Richard M. Johnson as vice-president, the opposition votes for president being divided between Gen. Harrison of Ohio and Judge White of Tennessee.—The financial stringency caused by the great commercial revulsion of 1836, compelled the new president to summon an extra session of congress on the 1st Monday in Sept. 1837. A decided administration majority had been chosen to either branch, and James K. Polk was elected speaker of the house. Mr. Van Buren's message urged the adoption of the independent treasury, or hard money policy, which had been first proposed 3 years before by William F. Gordon, a whig, from Virginia, and abruptly rejected, receiving but 34 votes. But now the "pet banks" had suspended specie payments, along with nearly all others, and could no longer be employed as depositories without a plain violation of existing laws. The independent treasury had, in fact, of necessity been adopted, and there seemed to be no practicable alternative but a national bank. Mr. Clay was profoundly averse to the administration project, and led the opposition to it in the senate, where the bill nevertheless passed by 25 yeas to 20 nays. In the house, however, it encountered a more formidable resistance, and was laid on the table by 120 yeas to 107 nays. Very little was effected at this extra session, which continued only 6 weeks, beyond providing for the immediate wants of the treasury. At the ensuing regular session, the independent treasury was urged anew by the president and his supporters, and again the opposition to it was led by Mr. Clay, who indicated his preference for a modified national bank. On his motion, a joint resolve, requiring the reception of the notes of solvent specie-paying banks in payments to the government, passed the senate, May 29, 1838.—In Feb. 1839, Mr. Clay delivered a carefully prepared speech on the subject of slavery, taking decided ground against the idea of immediate abolition as visionary and impracticable.—The opposition, or whig party, held a national convention to nominate candidates for president and vice-president at Harrisburg, Pa., early in Dec. 1839. Ex-governor James Barbour of Va. presided, while ex-governors Shultze of Pa., Metcalf of Ky., and Vance of Ohio, were among the vice-presidents. The names of Mr. Clay, Gen. Harrison, and Gen. Scott were submitted to the convention as candidates for the presidency. A decided plurality of the delegates were in favor of Mr. Clay's nomination, but no one received a majority until, after 3 days' balloting, the delegates who preferred Gen. Scott went over to the support of Gen. Harrison, and secured his nomination. Much feeling was evinced by the more ardent friends of Mr. Clay, not only in the convention but throughout the country; but it was checked and overruled by the precept and example of Mr. Clay himself, who promptly signified his acquiescence in the choice. Ex-governor John Tyler of Va., who was a delegate, and an ardent supporter of Mr. Clay, was designated for vice-president. The canvass which followed was animated. Gen. Harrison and Gov. Tyler were elected by 234 electoral votes to 60, having been successful in all but 7 states. Meantime, the inde[illegible] treasury bill was passed against Mr. [illegible] uous opposition in June, 184[illegible]. [illegible] was inaugurated March 4, 1841, [illegible] ately summoned the new congress [illegible] in extra session on the last Monday in [illegible] Before that date, however, the new [illegible] was numbered with the dead, [illegible] Gov. Tyler succeeded to the presidency. [illegible] remained in the senate, and was recog[illegible] congress as the leader of the now d[illegible] party there. Under his guidance, [illegible] houses rapidly matured and passed [illegible] pealing the independent treasury system, [illegible] porating instead a new bank of the [illegible] States, distributing prospectively the pr[illegible] of the public lands among the states, and [illegible] ing a national bankrupt law. The secon[illegible] these measures was vetoed by President T[illegible] who thereupon indicated to his friends [illegible] lines of a bank of moderate capital, and [illegible] to the regulation of the exchanges, [illegible] meet his approval. Such a bank [illegible] diately chartered, but this was in turn [illegible] This 2d veto caused an immediate and i[illegible] breach between President Tyler with [illegible] porters and the great body of the [illegible] sympathized with Mr. Clay. The mem[illegible] Mr. Tyler's cabinet, Mr. Webster ex[illegible] signed their posts. Mr. Tyler gr[illegible] to regard himself, or be [illegible] whig, and affiliated more and more o[illegible] the opponents of that party. The [illegible] tween the "Tyler men" and the "C[illegible] grew daily wider and deeper, and [illegible] quent reversion of power to the party s[illegible] overwhelmed at the polls was inevitable. [illegible] the ensuing regular session, the bank [illegible] was repealed. A tariff act was [illegible] the summer of 1842, which, be[illegible] framed as to perpetuate Mr. C[illegible] bution, was vetoed by the president [illegible] passed with that feature stricken [illegible] more protective in its character t[illegible] predecessors save that of 1828, [illegible] enue produced by it steadily increased [illegible] $12,000,000 or $15,000,000 yielded by [illegible] decessor to more than $30,000,000. [illegible] solvency and credit of the gov[illegible] reviving the prostrate industry o[illegible] —Meantime Mr. Clay (March 31, 1[illegible] signed his seat in the senate and [illegible] mal farewell to public life, as he had [illegible] do a year earlier but for the death [illegible] Harrison. But he was not [illegible] the quiet of his hon[illegible] public entertainment [illegible]

ld friends and neighbors on the poli-
ıe day, on June 9. In Oct. following,
d Indiana and spoke at Richmond,
Mr. Mendenhall presented to him a
asking him to free his slaves. As the
as public, Mr. Clay answered it on the
spirited speech, offering to emancipate
es if those who asked him to do so
ıtribute a sum equal to their value to
ed to their support. The offer was not
. He spoke also to an immense assem-
whigs at Dayton, Ohio, and spent the
winter in the South, mainly at New
whither business called him. The
ter was likewise spent in good part in
eans, whence he returned through the
Atlantic states, everywhere surround-
owds of friends to whose congratula-
fitly responded. His most elaborate
ras made at Raleigh, N. C. (April 12,
ıd all the great issues then dividing the
were therein frankly discussed. No-
ı the South did he seek to conceal his
the policy of protection. In reply to a
om S. F. Branson of Georgia, he had
(Sept. 13, 1843) written: "I had re-
ıy seat in the senate when the act of
d. Generally, the duties which it im-
lower than those in the act of 1832;
hout intending to express my opinion
ery item of this last tariff, I would say
hink its provisions are in the main wise
er. If there are any excesses or de-
t (of which I have not here the means
ng), they ought to be corrected." He
Washington city on April 26, but de-
proceed further north, as the whig
convention was to assemble at Balti-
May 1. On May 18 he left for Ash-
ich he reached on the evening of the
His nomination for the presidency had
been made by the people; the whig
ion ratified it with unanimity. No other
ed or thought of by a single delegate.
e Frelinghuysen of New Jersey was pre-
r vice-president. Never was a canvass
by a more united and sanguine party,
er fairer aspects. But fortune was not
ıry of persecuting Mr. Clay. The an-
f Texas, a measure which had been
the political caldron some months
ın to agitate and sway the feelings
the slave states. It had been recom-
by Gen. James Hamilton, jr., as calcu-
"give a Gibraltar to the South." Mr.
ho had spent the preceding winter in
rleans, the hot-bed of zeal for annexa-
erceived the rising storm, but did not
re it. In repeated addresses and let-
od that, while he did not object to
per se, nor yet on account of slavery,
regarded as a temporary institution,
opposed to any absorption of Texas
he should remain at war with Mexico,
r soil should continue to be claimed by
tion as a part of her territory, because
annexation under such circumstances would be an act of hostility and of bad faith toward the country from which Texas had revolted, involving us necessarily in the existing war. These convictions were shared by a very large portion of the American people; and Mr. Van Buren, for whom a majority of delegates to the democratic national convention had been secured, declared against annexation on similar grounds. When that convention met, however, the famous two-thirds rule was adopted, rendering Mr. Van Buren's majority ineffective; and, after some days' balloting for president without effecting a choice, the leading candidates, Van Buren, Cass, Buchanan, were gradually deserted for Col. James K. Polk of Tennessee, an avowed annexationist, who received the nomination. President Tyler, who had been nominated for reëlection by a national convention of officeholders, soon after declined, throwing all his influence into the scale of Col. Polk. While the advocates of annexation were thus concentrated, there was some expectation of a like concentration of its opponents on Mr. Clay; but this expectation was disappointed. Mr. Van Buren, with his more immediate personal friends, Silas Wright, Benjamin F. Butler, Thomas H. Benton, John W. Edmonds, William C. Bryant, Samuel Young, Theodore Sedgwick, and others, who had opened the canvass against annexation, were now supporting its avowed champion. Mr. Wright, who had been a leading opponent of annexation in the senate, and who professed still to oppose it, became the candidate of his party for governor of the state of New York. The extreme abolitionists, who professed the most intense hostility to annexation, also opposed Mr. Clay, because his avowed reasons for opposing annexation were not satisfactory to them, some of them declaring him as favorable to annexation as Mr. Polk, and more likely to effect it, because abler and more influential with his party. The combination of antagonist influences against Mr. Clay thus became truly formidable. And it is urged with reason that his anxiety to explain and defend his position against his assailants, as evinced in frequent letters on the subject, aided them to achieve their common object. On the vote of Pennsylvania Mr. Clay's supporters had counted with confidence. Mr. Polk had never till now professed to be other than a radical opponent of protection. But, in the midst of the canvass, a letter signed by him was published, avowing himself an advocate of "fair protection to our agriculture, manufactures, and commerce." This letter purported to be a reply to one of inquiry from Judge Kane, which was never published. It was hailed by Mr. Clay's opponents throughout Pennsylvania and kindred regions as a full committal to the doctrine of protection. The nomination of Mr. Dallas as vice-president with Mr. Polk was cited as a proof that Pennsylvania's interests were secure in such hands. Pennsylvania was thus carried for Mr. Polk by a majori-

ty of 6,332 in over 350,000 votes, while New York was likewise carried for him by a majority of 5,106 in 485,882 votes, 15,000 of her abolition votes having been cast for James G. Birney. These two states raised Mr. Polk's electoral vote to 170 against 105 for Mr. Clay. Had they been reversed, Mr. Clay would have had 167 to 108. The popular vote was of course very close: for Polk, 1,336,196; for Clay, 1,297,912; for Birney, 62,127. (South Carolina chooses her electors by the legislature, and so cannot be included above.) The tariff of 1842 was overthrown soon after, not merely on the impulse and with the approval of James K. Polk, but by the casting vote in the senate of George M. Dallas.—Mr. Clay remained in private life, declining a reëlection to the senate on the retirement of Gov. Morehead, and devoted himself to his family, his neighbors, and his farm, but once or twice visiting New Orleans in winter, where he effectively addressed a meeting called to extend relief to the sufferers by the great famine in Ireland, and speaking once at Lexington in condemnation of the war against Mexico. In that war, his son and namesake, Henry Clay, jr., lieutenant-colonel of the Kentucky volunteers, fell at the battle of Buena Vista. "My life has been full of domestic afflictions, but this last is one of the severest of them," he wrote to a friend soon afterward. Always a Christian in faith and hope, he united with the Protestant Episcopal church in Lexington, June 25, 1847. He was at Washington on business in the supreme court the following winter, and made a speech at the meeting of the colonization society, over which he presided. Invited to dine with the president, his salutation to Mrs. Polk reminded his admirers of the Harry Clay of other days. "I never heard any body complain of *your* administration, madam," he archly observed, "though I have occasionally heard *some* complaint of that of your husband." June 7, 1848, had been designated as the time, and Philadelphia as the place, for the next whig national convention, preliminary to which the whigs of New York city held a mass meeting in Castle Garden, to express their devotion to Mr. Clay. In the national convention, the 1st ballot for a candidate for president resulted as follows: for Gen. Zachary Taylor, 111; Henry Clay, 97; Winfield Scott, 49; Daniel Webster, 22; John M. Clayton, 4; John M'Lean, 2. After the 2d ballot, which increased Gen. Taylor's vote to 118, and reduced Mr. Clay's to 86, the ultimate result could not be doubted. The convention adjourned over that night, and next morning Gen. Taylor was nominated on the 4th ballot, receiving 171 votes to 32 for Clay, 63 for Scott, and 14 for Webster. Millard Fillmore, of New York, was nominated for vice-president. Gen. Taylor was elected, receiving the votes of Georgia, Louisiana, and Florida, which probably could not have been carried for Mr. Clay. He received also the vote of Pennsylvania, which Mr. Clay might have lost; but he lost the vote of Ohio, which Mr. Clay would probably have carried, as he had carried it in 1844. Not one of the new free states voted for Gen. Taylor, who received the electoral support of 15 states, casting 163 votes; while his rival, Gen. Cass, was supported likewise by 15 states, but their full strength was 127 electoral votes. Mr. Van Buren, who stood as a third candidate, on a distinct free soil issue, received no electoral votes, though respectably supported in the popular vote of several of the free states, and outrunning Gen. Cass in New York, Vermont, and Wisconsin. His nomination doubtless contributed to Gen. Taylor's triumph.—During the year 1849, the people of Kentucky having resolved to remodel their state constitution, Mr. Clay addressed them in a long, temperate, and persuasive letter, urging them to embody in their reformed charter of government the principle of gradual emancipation. They overruled this suggestion by a very decided vote, as they had done half a century before.—Mr. Clay was once more chosen on the assembling of the new Kentucky legislature, in Dec. 1848, to a seat in the United States senate, for a full term of 6 years from the 4th of March ensuing. He took his seat accordingly, Dec. 3, 1849, 48 years subsequently to his first appearance in that body. On Jan. 29, 1850, Mr. Clay rose in the senate to introduce and commend his proposition for "an amicable arrangement of all questions in controversy between the free and the slave states growing out of the subject of slavery." On account of the historical importance of these propositions we give them in full; they were as follows:

"1. *Resolved*, That California, with suitable boundaries, ought, upon her application, to be admitted as one of the states of this Union, without the imposition by congress of any restriction (condition) in respect to the introduction or exclusion of slavery within those boundaries.

"2. *Resolved*, That as slavery does not (now) exist by law (in) and is not likely to be introduced into any territory acquired by the United States from the republic of Mexico, it is inexpedient for congress to provide by law either for its introduction into, or exclusion from, any part of said territory; and that appropriate territorial governments ought to be established by congress in all of said territory not assigned as (within) the boundaries of the aforesaid state of California, without the adoption of any restriction or condition on the subject of slavery.

"3. *Resolved*, That the western boundary of the state of Texas ought to be fixed on the Rio del Norte, commencing one league from its mouth, and running up that river to the southern line of New Mexico, thence with that line eastwardly, and so continuing in the same direction to the line established between the United States and Spain, excluding any portion of New Mexico, whether lying on the east or west of said river.

"4. *Resolved*, That it be proposed to the state of Texas, that the United States will provide for all the legitimate and *bona fide* public debt of that state, contracted prior to its annexation to the United States, and for which the duties on foreign imports were pledged by the said state to its creditors, not exceeding the sum of $——, in consideration of the said dues so pledged having been no longer applicable to that object after the said annexation, but having thenceforward become payable to the United States; and upon the condition also that the said state of Texas shall, by some solemn and authentic public act of her legislature or of a convention, relinquish to the United States any claim which it has to any part of New Mexico.

"5. *Resolved*, That it is inexpedient to abolish slavery in the district of Columbia, while that institution continues to exist in the state of Maryland, without the consent of that state, without the consent of the people of the district, and without just compensation to the owners of slaves within the district.

"6. *But resolved*, That it is expedient to prohibit within the district the slave trade, in slaves brought into it from states or places beyond the limits of the district, either to

ein as merchandise, or to be transported to other
hout the district of Columbia.
ved, That more effectual provision ought to be
r, according to the requirement of the constitu-
restitution and delivery of persons bound to
bor in any state who may escape into any other
y in the Union.
olved, That congress has no power to prohibit
slaves between the slaveholding states;
or exclusion of slaves, brought from
n, depends exclusively upon their
aws.

to give these resolutions in full
of the debate thereupon,
y were o ed to when
by southern ators, on
in ct ued every
North y by assertion
has uce in the
ir clear tion of the
to abolish slavery in the
rable contest thus open-
through nearly 8 months, and
passage of bills: 1, admitting
defining the boundaries of Tex-
her $10,000,000 for the re-
all pretensions to any juris-
itory outside of these limits; 3,
territories of New Mexico and
silent on the subject of slavery;
the slave trade in the district of
5, granting more summary and
ns for the recovery of fugitives
fugitive slave law). Having
se acts (and very little of moment be-
ourned on the 30th of Septem-
had suddenly died in July,
llard Fillmore succeeded to the
ongress reassembled Dec. 3, Mr.
his seat on the 10th. On the 23d
some petitions for a revision of
of 1846, with a view to additional pro-
expressed his hearty concurrence
er, and his desire that the subject
approached and considered in entire
of party and partisanship. On Feb. 19,
g appropriations for the improve-
in harbors and rivers" came from
which it had passed by 103 to 87),
ported without amendment on the
h 1, it was called up, and a des-
ensued. Its friends were a de-
of the senate, and Mr. Clay led
the ardor and energy of his youth;
ould not prevent its adversaries from
the time in debate. At 4 o'clock
4 (4 hours after the session and
should have ended), the friends
were reluctantly constrained to lay
so that the necessary appropriation
be saved, and an extra session pre-
Mr. Clay's last parliamentary
He remained at Washington to attend
sion of the senate, called by Presi-
e to despatch executive business,
accept the quota assigned him of
mileage" for such attendance.
rned to Kentucky, and spent his
with his family and friends there, in feeble but not broken health, writing but one letter for the public, and that to New York, to urge acquiescence in and obedience to the compromise measures of 1850. He returned to Washington quite feeble and ill at the opening of the next congress—so ill that he was in his seat but a few days, and was soon confined to his apartments. He was already emaciated, suffering severely from cough, with intervals of difficult breathing. He was waited on in his room by Louis Kossuth, to whom he expressed his sympathy for the struggles and sufferings of Hungary, but his unchangeable aversion to any intervention by the United States government in the sanguinary strifes of Europe. This was his last formal avowal of his sentiments on any public question. He continued to sink gradually under the ravages of disease until June 29, 1852, when, a little past 11 A. M., he breathed his last, in the presence only of his son James, his host, his favorite servant, and his friend Gov. Jones of Tennessee. Congress assembled within the next hour, and each house immediately adjourned, simply listening to an announcement of the fact. The next day the event was the subject of an oration by his colleague, Mr. Underwood, in the senate, and in the house by the representative of his old district, John C. Breckinridge, now vice-president. Eulogies were also pronounced in the senate by Messrs. Cass of Mich., Hunter of Va., Hale of N. H., Cooper of Pa., Seward of N. Y., G. W. Jones of Iowa, and Brooke of Miss.; and in the house by Messrs. Ewing of Ky., Caskie of Va., Chandler of Pa., Bayly of Va., Venable of N. C., Haven of N. Y., Brooks of N. Y., Faulkner of Va., Packer of Ind., and Walsh of Md. Two passages from the remarks of Mr. Breckinridge—a life-long political adversary, but a neighbor and personal friend—will fitly conclude this sketch: "As a leader in a deliberative body, Mr. Clay had no equal in America. In him, intellect, person, reason, eloquence, and courage united to form a character fit to command. He fired with his own enthusiasm, and controlled by his amazing will, individuals and masses. No reverse could crush his spirit, no defeat reduce him to despair. Equally erect and dauntless in prosperity and adversity, when successful, he moved to the accomplishment of his purposes with serene resolution; when defeated, he rallied his broken bands around him, and from his eagle eye shot along their ranks the contagion of his own courage. Destined for a leader, he everywhere asserted his destiny. In his long and eventful life, he came in contact with men of all ranks and professions; but he never felt that he was in the presence of a man superior to himself. In the assemblies of the people, at the bar, in the senate, everywhere within the circle of his personal presence, he assumed and maintained a position of preëminence. . . . . . The life of Mr. Clay is a striking example of the abiding fame which surely awaits the direct and candid statesman. The entire absence of equi-

vocation or disguise in all his acts was his master-key to the popular heart; for while the people will forgive the errors of a bold and open nature, he sins past forgiveness who deliberately deceives them. Hence Mr. Clay, though often defeated in his measures of policy, always secured the respect of his opponents, without losing the confidence of his friends. He never 'paltered in a double sense.' The country was never in doubt as to his opinions or his purposes. In all the contests of his time, his position on great public questions was clear as the sun in a cloudless sky. Sir, standing by the grave of this great man, how contemptible does appear the mere legerdemain of politics! What a reproach is his life on that false policy which would trifle with a great and upright people! If I were to write his epitaph, I would inscribe as the highest eulogy on the stone which shall mark his resting-place: 'Here lies a man who was in the public service for 50 years, and never attempted to deceive his countrymen.'"—Mr. Clay married in April, 1799, Lucretia, daughter of Col. Hart of Lexington, with whom he lived happily more than 53 years. She still (Dec. 1858) survives, living at Ashland with her son James B. Clay. To Henry and Lucretia Hart Clay were born 11 children, 6 daughters, of whom the last (Mrs. Ann Brown Erwin) died in New Orleans in 1835, and 5 sons, of whom Henry Clay, jr. (born 1811), killed at the battle of Buena Vista, is the only one known to us to have deceased. James B. (born 1817) now represents his father's old district in congress. Thomas H. (born 1803) is a farmer near Lexington. John M. (born 1821) is a lawyer in Kentucky. The eldest, Theodore Wythe (born 1802), lost his reason early in life, through a casualty.—The speeches and writings of Mr. Clay have been published in several collections, but the most complete edition, with a biography, is by the Rev. Calvin Colton (6 vols., New York, 1857).

CLAYBORNE, William, an early Virginia colonist, and a member of the council and secretary of state "of this kingdom," as the ancient dominion was then styled. In 1627 the governor of Virginia gave him authority to discover the head of Chesapeake bay, or any part of Virginia from lat. 34° to 41° N. In 1631 King Charles granted him a license to make discoveries and trade. He established a trading post on Kent island in the Chesapeake bay, not far from the present capital of Maryland, Annapolis. A burgess was returned from that island to the Virginia assembly, and a warehouse was established there by law. On Feb. 24, 1634, Leonard Calvert arrived in Virginia at the head of a company of Roman Catholics, sent out by Lord Baltimore to settle a colony in Maryland. Clayborne, looking upon this proceeding as an encroachment upon his possessions, and upon the territorial rights of Virginia, gave the strangers alarming accounts of the hostile spirit which they would have to encounter in the Maryland Indians. A dispute soon arising between Lord Baltimore, the proprietary, and Virginia, the privy council left the parties to the course of law. Clayborne continued to claim Kent island and to repudiate the jurisdiction of the infant Maryland; and at length Lord Baltimore gave orders for his arrest. Exciting the jealousy of the natives against the new-comers, and infusing his own spirit of opposition into the inhabitants of Kent island, an engagement took place (April 23, 1635) between a small armed vessel, cruising under his auspices, and two vessels sent out by the Marylanders. One of the Marylanders being killed, Clayborne, although not arrested, was indicted and found guilty of murder, piracy, and sedition—constructive crimes inferred from his determined opposition and obstinate insubordination. He took refuge in the more settled part of Virginia, and his estate on Kent island was seized by the Maryland authorities as forfeited. To confirm the charges against him, the Indian king of Patuxent was examined relative to Clayborne's intrigues. Sir John Harvey, governor of Virginia, refusing to surrender Clayborne to the Maryland commissioners, he went over to England, accompanied by witnesses, to have the matter investigated. He presented to Charles I. a petition setting forth his grievances; and in 1638 the king severely reprimanded Lord Baltimore for having, in violation of his royal commands, dispossessed Clayborne of his rightful possessions in Kent island and slain several persons inhabiting there. Nevertheless, in the ensuing year the lords commissioners of plantations, with Archbishop Land at their head, made a decision absolutely in favor of Lord Baltimore. Clayborne, despairing of present redress, awaited the future opportunity of retaliation and revenge. In 1645, taking advantage of the distractions of the mother country and of Maryland, at the head of a body of resolute insurgents he expelled Leonard Calvert, deputy governor, and seized the reins of his diminutive government. In the following year Calvert, who in his turn had fled to Virginia, was reinstated, yet Clayborne emerged from this singular contest with impunity. In 1651 he was appointed by the English council of state one of the commissioners for the reduction of Virginia to obedience to the commonwealth of England. The articles of capitulation were subscribed by Richard Bennett, William Clayborne, and Edmund Curtis, in behalf of the parliament. Bennett (a roundhead) and Clayborne, now embarking in the Guinea frigate, reduced Maryland also under the government of the commonwealth of England. Shortly after, Bennett was made governor of Virginia, and Clayborne secretary of state. The latter, together with Capt. Henry Fleet, was about this time authorized to make discoveries to the south and west. Upon the dissolution of the long parliament by Cromwell, the Maryland authorities, violating the terms of their agreement with Bennett and Clayborne, who claimed to act under the authority of the protector,

nt and intrusted it to a
. A civil war between
ow ensued in Mary-
were defeated with
the province was thus subject-
. In 1660, when Sir
was cted by the assembly,
rginia *interim*, Clayborne
appointment. After the res-
superseded in the office of
by Thomas Ludwell. During
he was a member of the
upon the trial of the
ved in the county of New
l that the county derived its
l of Kent. It is probable
Kent at an advanced age.
er he was adventurous and inde-
d in defence of her territorial
never had a champion more
and indomitable. He was
acter in Virginia, strong in
igh in public office; and it
that more is not known of
Col. William Clayborne lies
William co., not far from West
t where he fell when mortally
engagement with the Indians.
are numerous, and are found
f the United States, and sev-
been distinguished men. The
Claiborne.

. E. co. of Iowa, bordering
ed E. by the Mississippi river;
m.; pop. in 1856, 15,187.
s in the south-east; the
exclusive, and water power is
fertile prairies occupy a great part
. In 1856 the productions were
hay, 258,438 bushels of wheat,
, and 507,579 of corn. About
nd has been improved. Settle-
een de with great rapidity for
st of the immigrants being
Garnavillo.

, a village and township of Jeffer-
, and a port in the collection dis-
Vincent; pop. in 1855, 4,232. It
inus of the Utica and Black river
the St. Lawrence and Chaumont
as a landing for vessels plying on
ence.

, AUGUSTIN SMITH, an American
at Fredericksburg, Va., Nov. 27,
Athens, Ga., June 21, 1839. His
ved to Georgia soon after his birth,
graduated at the university of
He entered at an early age
s of law, soon rose to distinc-
was elected a representative in
re, and in 1810 was appointed
to compile the statutes of
). In 1819 he was elected
rior court of the western cir-
he held till 1825, and again
1831. In his last term those disturbances began between the state of Georgia and the Cherokee Indians, which finally resulted in the expatriation of the latter. In 1829 the legislature extended the laws of Georgia over the territory occupied by the Cherokee nation, and the legitimacy of this movement was sustained by Judge Clayton, though the U. S. supreme court subsequently decided the Cherokee nation to be sovereign and to be authorized to govern themselves. Yet he maintained the right of the Indians to dig gold on lands, their stipulated title to which had not been extinguished, and for thus opposing the policy of the state he was superseded in his judicial office. He was immediately after elected a representative in the national congress, where he took a prominent part in debates on the tariff and the U. S. bank, both of which he opposed. After his return from congress in 1835, he held no other public office than the trusteeship of the university of Georgia.

CLAYTON, JOHN, an American botanist, born in Fulham, England, in 1686, died in Virginia, Dec. 15, 1773. When about 20 years old he emigrated to Virginia, of which province his father had been appointed attorney-general. He was brought up a physician, and was indefatigable in his botanical researches. He addressed papers on the natural history of Virginia to the royal society of London, which were published in the "Philosophical Transactions." He also forwarded dried specimens of the flora of Virginia to Gronovius, who in conjunction with Linnæus published an account of a portion of them at Leyden in 2 parts in 1739–'43. The remainder were described in a 3d part by the son of Gronovius after the death of his father. Gronovius gave the name of Clayton to a genus of plants.

CLAYTON, JOHN MIDDLETON, an American statesman, born at Dagsborough, Sussex co., Delaware, July 24, 1796, died at Dover, Kent co., Nov. 9, 1856. He was the eldest son of James Clayton (a descendant of Joshua of that name, who came to this country with William Penn) and Sarah Middleton, of Virginia ancestry. The pecuniary disasters that befell the country soon after the close of the war of 1812, reduced his father from affluent to restricted means, and he almost despaired of educating his son, who gave evidence of talents of a high order; but he became able to place him in Yale college, where he graduated with distinction in 1815. In 1819 he completed his course of study at the Litchfield law school, and entered immediately upon the labors of his profession, in his native state. On his admission to the bar, he at once acquired a large practice, which he retained until appointed to the bench. This was achieved not less by his ability in the highest court, than by his skill before a jury. In a noted trial at bar, where he was employed to prosecute for the high offence of kidnapping, he succeeded, by his great power of cross-examination, in so convicting the leading witness for the defence of falsehood, that the perjurer fell at the stand; and on all occasions where the least suspicion of

equivocation rested upon a witness, he was sure to extract from him the truth and the whole truth. With juries he had great power. His fine personal appearance, ease and familiarity of address, copiousness of language, and rare powers of illustration, aided by a thorough knowledge of his case and of the feelings which influence the judgment of men, insured him the victory in all cases where the subject of the contest called those controlling qualities into full exercise. In Jan. 1837, he was appointed to the chief justiceship of Delaware, but resigned that office after having held it 3 years. From none of his decisions on the circuit was a writ of error ever taken. They, and those in the court of appeals, are to be found in vol. ii. of Harrington's "Reports." At the close of that book is a decision made by him in the court of general sessions, in the case of an indictment for blasphemy, in which the law upon that subject is thoroughly discussed and settled. In 1831, he was elected by the voters of Kent co. to the convention to revise the constitution of the state, and was a most active and influential member of that body. A member of what was then the Adams and afterward the whig party, he was elected to a seat in the U. S. senate in 1829; was reëlected in 1835; resigned in 1837; was again elected in 1845; resigned in 1849, to take a seat in the cabinet; was again elected in 1851, and continued in the office until his death. The first resignation was occasioned by his acceptance from the governor of the office of chief justice; the last by becoming secretary of state under the administration of President Taylor. Soon after he entered the senate, the famous debate on Foot's resolution occurred; and although the youngest man in the chamber, he made a speech which secured for its author a place among the leading members of that body. To the French spoliations question he also gave his attention, and made an impressive argument in favor of paying the claims. One of his most remarkable efforts was a speech delivered in 1855, against the message of President Pierce vetoing the act ceding public lands for an insane asylum, commonly known as Miss Dix's bill. During his career as the chief minister of state, he negotiated the celebrated treaty of 1850, with England, commonly called the Clayton-Bulwer treaty, a convention which its friends have ever regarded as the inauguration of a new era in diplomacy, and memorable also for the debate in relation to its interpretation during the session of 1851, in which Mr. Clayton vindicated Taylor's administration, and his own character as a statesman, from the assaults made upon them, and elaborately and powerfully set forth his views as to the real meaning of the treaty. —From the year 1844, Mr. Clayton turned his attention to the subject of agriculture, and became a farmer upon a tract of land near New Castle, which in a very few years he made one of the most productive estates in that rich county. No public man of modern American times has enjoyed a greater personal popularity in his own state than [illegible]
Always accessible to the humb[illegible]
the highest, he secured for h[illegible]
affectionate regard, which [illegible]
and unlimited conversatio[illegible]
calculated to establish. [illegible]
decided political [illegible]
vocacy of the d[illegible] which h[illegible]
his frankness of [illegible] evi[illegible]
joined to an [illegible]
of republican institutions, cl[illegible]
spect of his opponents; and [illegible]
were more ready than they [illegible]
timate in which they [illegible]
and his patriotism. In 1[illegible]
married to the daughter [illegible]
of Delaware, who died after the [illegible]
second son. This affliction be[illegible]
with his whole existence, and he [illegible]
again. The sons both died so[illegible]
tained manhood. Always imbu[illegible]
religious faith, Mr. Clayton dev[illegible]
of the last years of his life to [illegible]
Bible, and of orthodox religious [illegible]
last illness he was received into [illegible]
rian church, and died in the [illegible]
Christian.

CLAYTON, Joshua, an [illegible]
who, when Peruvian bark be[illegible]
the revolutionary war, succe[illegible]
for it in his practice a mix[illegible]
poplar and the bark of the roo[illegible]
in nearly equal parts, and h[illegible]
the interior bark of the whi[illegible] oak.
ton officiated as president of Dela[illegible]
al years (1789–'93), as governor [illegible]
was a member of the U. S. [illegible]
of his death, which to[illegible]

CLAYTON, Robert, [illegible]
sively bishop of Killala, Cork, [illegible]
born in Dublin in 1[illegible] died [illegible]
1758. He was a Unit[illegible]
frequently moved in the [illegible]
the rejection of the Nic[illegible] A[illegible]
creeds from the "Book of [illegible]

CLAZOMENÆ, now K[illegible]
12 cities of the Ionian c[illegible]
capolis), in Asia Minor, on [illegible]
originally built on the isthmus [illegible]
Ionian peninsula with the [illegible] and
S. W. of Smyrna, but subse[illegible]
from fear of the Persians to a[illegible]
which Alexander the Great [illegible]
ed with the continent by a [illegible]
which are still visible. Cla[illegible]
by the Colophonians, but [illegible]
not exclusively Ionians. [illegible]
nesian war it belonged to [illegible]
revolted, and returned to its all[illegible]
axagoras was born here about 50[illegible]

CLEANTHES, a Greek Stoic [illegible]
born at Assus, in Asia Minor [illegible]
died in Athens about [illegible]
profession of an athlete, [illegible]
commotion he arrived in A[illegible]
only 4 drachmas, he [illegible]

ater-carrier for gardens, and began to study hilosophy, working by night, and applying imself to the lessons of Crates and Zeno by ay. He was a disciple of the latter for 19 ears, and upon his death in 263 succeeded him the head of the Stoic school. He was so slow f conception that he was named "the ass," so borious that he was styled the second Hercu s, and he lived so austerely from his secret octurnal labors that the areopagus summoned im to give an account of his mode of life, and hen voted him a present of 10 minæ, which eno, however, forbade him to receive. The thenians held him in the highest esteem, and ut for his interposition would have banished comic poet who ridiculed him on the stage. He caused his own death by voluntary starvation, an ulcer threatened to be fatal to him. wrote many philosophical works, only fragnts of which remain. A hymn to Jupiter by has been preserved by Stobæus, in which e recognizes one supreme God, omnipotent and eternal, who governs nature by an immutable law. It has been admired by Christian theologians, and is contained with a Latin version in Cudworth's "Intellectual System." An English translation is found in F. W. Newman's work entitled "The Soul."

CLEARCHUS, a Lacedæmonian general, distinguished in the last years of the Peloponnesian war, and at its close sent to Thrace to protect the Greeks against the barbarians. Recalled by the ephors, he refused to obey, and was sentenced to death. He then went over to Cyrus the younger, governor of Lydia and other provinces of Asia Minor, and followed him (401 B. C.) as commander of 13,000 enlisted Greek mercenaries, on his expedition against his brother, Artaxerxes II. None of his followers knew the secret aim of their long marches from province to province until they reached the plains of Babylonia, and the skill of Clearchus in leading them was as admirable as his and his companions' valor in and after the battle at Cunaxa, in which the Greeks vanquished the wing of the Persians opposed to them, while the ambitious prince fell by the hand of his brother, the king. Diminished by their losses, the Greeks retreated fighting, and won a new victory. But knowing that, surrounded by countries and armies of enemies, they must perish even amid continual successes, Clearchus accepted the invitation of the Persian commander, Tissaphernes, to come with his fellow-commanders to a friendly conference in the camp of the enemy. Scarcely had they entered the tent of the satrap when all of them were massacred. Left without commanders and in despair, the Greeks were saved by Xenophon, who admirably led their retreat, no less admirably described in his Anabasis.

CLEARFIELD, a central co. of Penn., area about 1,150 sq. m., situated mostly on the W. declivity of the Alleghany mountains; pop. 12,586. The W. branch of the Susquehanna river bisects it, and near the middle of the county receives the waters of Clearfield creek. Mushannon creek runs along the S. E. boundary. The soil near the large streams is fertile, and on the uplands are good pastures and some arable tracts. The eastern part is much cut up by deep ravines, and is generally too rugged for cultivation. The mineral wealth of the county consists chiefly of hard coal and iron. The forests furnish large quantities of pine, oak, poplar, and cherry, which are conveyed down the rivers by means of rafts. The agricultural productions in 1850 were 80,588 bushels of wheat, 158,870 of oats, 10,556 tons of hay, and 168,845 lbs. of butter. There were 20 churches, a large number of founderies, mills, and factories of various kinds, and 2,810 pupils attending public schools. Formed in 1804. Capital, Clearfield.

CLEARING HOUSE, a kind of banking exchange established in New York and other great cities for the use and convenience of bankers and bankers' clerks. It was first introduced in London, in 1773. The practice of carrying large sums of specie and negotiable paper about was so very inconvenient and productive of loss, that it was found necessary to promote an arrangement whereby the bankers could meet and exchange the checks upon each other which had been handed in to them by their customers for collection. Each bank has its clearing house clerk, whose duty it is to draw out an abstract of the checks upon other houses, and at the clearance to exchange them against those on his own bank. The balance is paid in cash. If any check thus obtained by exchange should, on its being taken home and compared with the customer's account, be dishonored, it is returned the same day before banking hours are over.—The New York clearing house was established in 1853, including 52 of the banks of that city. The Boston clearing house was organized in the autumn of 1855, and went into operation in the spring of the next year.

CLEAVELAND, Parker, LL.D., an American mineralogist, professor of chemistry, mineralogy, and natural philosophy in Bowdoin college, born at Rowley, Mass., Jan. 15, 1780, died at Brunswick, Me., Oct. 15, 1858. The son of an eminent physician, he completed his preparatory studies in his native place at Dummer academy, the oldest academy in New England, and entered Harvard college in his 16th year. After graduating in 1799, he passed 3 years in school teaching in Haverhill, Mass., and York, Me., being in the latter place also postmaster and clerk of the courts, and at the same time studying law, and for a few weeks, at the earnest solicitation of his father, theology also. Appointed a tutor in Harvard college in 1803, he remained in that position till 1805, when he was chosen professor of mathematics and natural philosophy, and lecturer on chemistry and mineralogy, in Bowdoin college, an office which with some modifications he retained till his death. Thus connected with this institution

from its infancy, he instructed every class that has graduated from it, and by his learned labors in science and his enthusiasm in teaching he contributed largely to its growth and eminence. He devoted himself especially to the department of mineralogy, then almost a new study in this country, and with knapsack and hammer traversed the surrounding country as far as the White mountains in prosecution of his researches. The mineralogical collections in the cabinets of the college, of which a European collection had been the nucleus, were thus rendered by him very complete in native specimens, and he continued to increase them in variety and value by interchanging specimens with men of science in different parts of the world. He contributed several papers to the journal of the American academy of arts and sciences, and in 1816 published his "Mineralogy and Geology," in 2 vols., a work which earned for him the name of the father of American mineralogy, and did much to associate this country with the scientific labors of older nations. It was upon the general system of Brongniart and Haüy, and was chiefly distinguished by the minute accuracy of its descriptions, and by the original information which it gave of the new localities of minerals. The correspondence of Prof. Cleaveland was now solicited by the most eminent scientific men, by Sir Humphry Davy, Sir David Brewster, Cuvier, Brongniart, and Haüy, and he received diplomas of membership from 16 of the principal literary and scientific societies in Europe. Professorships were also tendered to him at different times by Harvard, Dartmouth, Princeton, and other colleges in the United States. A second and much enlarged edition of his "Mineralogy" appeared in 1822, which had a wide circulation both at home and abroad, and increased the public interest and stimulated various researches in the mineralogy of this country. At this period he was famous in the village of Brunswick as commander of a fire company, an office which he held for more than 20 years, and in which he was noted for his punctuality, his intrepid management of the hose pipe, and the strict discipline which he enforced. During the interregnum about 1831 he was acting president of the college, and in 1839, upon the resignation of Pres. Allen, the presidency was offered to him, which he declined; and from that time his efforts were chiefly as teacher and lecturer before the classes of the college and of the medical school connected with it. He, however, expended much labor in preparing the long-promised third edition of his "Mineralogy," only a portion of which was completed at his death. His genial enthusiasm in scientific pursuits, his clearness of perception, and severe official fidelity obtained for him remarkable success and popularity as an instructor. His mind, less inclined perhaps to the higher generalizations and deeper intuitions of science than to the orderly arrangement of facts and clear enunciation of certain laws, was thereby
the better adapted to the class-ro
exemplified and required in students
exactitude of thought and habit.
panied his chemical lectures with
illustrative experiments, the most
and precarious of which were unifo
hands successful. The large mine
lections under his care were mode
arrangement, and were copiously ca
In striking contrast with the mili
ness of his scholastic character, were
and free manners, his good humor,
and readiness to communicate infor
his hours of leisure, amid the flowers
of his garden, the shells and mi
cabinets, in his study, or occasi
social circle. It is a rare instance
larity that during 67 years he never
meal, and that during the 53 years o
nection with Bowdoin college he
own account of attending only 8 re
lectures. During the latter period
meteorological journal, noting the w
8 different hours every day. Three
fore his death his feeble health obli
though with great reluctance, to c
citation from the earlier hour which
usual to 9 o'clock A. M. Unable to co
recitation on the preceding day, he w
the morning of his death purposing
it, when at about 8 o'clock he died in
of affection of the heart. On the
funeral the stores in the village we
the college buildings and many pri
dences were draped with mourning,
college government, students, many
from neighboring towns and cities, cit
firemen joined his family in followin
mains to the church and to the burial

CLEEF, Jan van, a Flemish
at Venloo in 1646, died in Ghent in
works are to be found in many ch
Flanders and Brabant. In Ghent,
are very numerous, there is a fine
him in the convent of the Black
senting a sister of the order succo
stricken with the plague.

CLEEF, or Cleve, Joost van, a
painter, born at Antwerp about 1
1529. He went to England in
Philip and Mary, and was introdu
but left in disgust upon finding that
of Titian were preferred to his own.
ceit and eccentricities bordered on
and he went by the name of "The Fo
was, nevertheless, an artist of merit,
left some fine pictures in Flanders and
among which one at Amsterd
Bacchus with gray hair and a y
worthy of note.

CLEF, or Cliff, in music, a ch
fixed to some one of the lines of
show the key in which the piece of
gins. The word means literally a ke
by showing where one of the letters
the staff, it indicates the p

clefs now in use are the F, or base clef,
C, or or clef, and the G, or treble clef.
S (Gr. κλημα, tendril), a genus of
mbing and highly ornamental shrubs,
ing to the natural order *ranunculaceæ*.
ally distinguished by having 4 val-
sepals, no petals, opposite leaves,
ls bearing the styles as long feathery
embraces more than 50 species, distri-
ard from Mexico to Japan, 9 of
natives of North America. The
often odoriferous, and its color is
llow, violet, purple, or blue. The
(Linn.), often called the traveller's
a native of England, and is com-
out England and France, cov-
and old walls with its ample pin-
and its panicles of white fragrant
Its leaves contain an acrid juice
itates the skin, and were used by beg-
middle ages to produce artificial and
able ulcers. The *C. flammula*, the
scented of the species, resembles
, but has smaller leaves and flow-
ndigenous and most abundant in
France. The *C. cirrhosa* is an ele-
reen, with large greenish-white flow-
bundant in Spain, and on the Atlas
in Africa. The *C. viticella*, or blue
cially esteemed for forming trel-
and is distinguished by its
plish, bell-shaped blossoms hanging
upon solitary peduncles. The genus
of Linnæus, embracing one American
1 Siberian and Alpine plants, is by
ors made a species of clematis.
the American species are the *C. Vir-*
or virgin's bower, having leaves with 3
te leaflets, numerous white flowers in
clusters on axillary peduncles, climb-
shrubs along river banks, and common
the United States; the *C. viorna*,
ower, with a very glabrous, bell-
purplish calyx, with fruit bearing very
tails, and found in rich soil in the mid-
southern states; and the *C. ochroleuca*,
le and entire leaves, silky beneath,
large nodding flowers, yellowish
wi erect stem, growing about 1 foot
found rarely in New York, Pennsyl-
Virginia. All the species of clematis
and blossom freely in any light soil, and
are widely esteemed in gardens for trellis-
and for training against a wall. They
readily propagated by layers, young cut-
seeds.

MENCIN, Diego, a Spanish statesman
or, born in Murcia, Sept. 27, 1765, died
d, July 30, 1834. At the age of 9 he
the college of San Fulgencio in his na-
, pursued his studies there with distin-
success, and before he was 21 was ap-
professor of theology and philosophy.
selected theology for his profession, but
nt to a lady, whom he married in
an engagement of 10 years, led him to renounce the church. He resided for a time in Paris, and returned to Madrid in 1801. He was editor of a journal at the time of the outbreak of the peninsular war in 1808, and as such came into collision with Murat, the commander of the French. As a member of the cortes of Cadiz he took part in drawing up and maintaining the constitution of 1812. Upon the supremacy of the absolutists in 1814, and the return of Ferdinand, Clemencin withdrew to Fuenfria. In the 2d constitutionalist outburst of 1820 he again was a member of the cortes, first its secretary, and then its president, and subsequently minister of state. Upon the 2d absolutist reaction of 1823 he was banished only from Madrid, and was soon permitted to return even thither. In the alternations of Spanish politics a 3d constitutional period soon succeeded, in which Clemencin drew up the oath taken by the present queen, and was made a peer of the kingdom. Among his earlier literary undertakings were translations of some of the classics, and of the Gospel of St. John; his later works were on subjects of Spanish history. His eulogy on Queen Isabella, with the annexed dissertations (filling the 6th vol. of the *Memorias de la Academia de la Historia*), was a work of much importance prior to the history of Prescott. His most valuable work is the commentary on Don Quixote (Madrid, 1833–'39, 6 tom. 4to.). He also wrote a dissertation on the Cid.

CLEMENS, Jeremiah, a U. S. senator from Alabama, born at Huntsville, Dec. 28, 1814. He was educated at Lagrange (Ala.) college, and at the university of Alabama, where he graduated in 1833. In Nov. 1833, he entered the law school attached to Transylvania university, at Lexington, Ky., and began to practise in 1834. In 1838 he was appointed by President Van Buren U. S. district attorney for the northern and middle districts of Alabama. In 1839 he was elected to the legislature from Madison co.; was reëlected in 1840, and again in 1841. In 1842, on receiving news of the 2d invasion by Mexico of the republic of Texas, he raised a company of volunteers, and soon after being mustered into the Texan service, was chosen lieutenant-colonel of a regiment. Upon the restoration of peace he returned to the United States, and was again elected to the legislature in 1843, and was reëlected in 1844. In March, 1847, he volunteered for the Mexican war, was appointed major of the 13th U. S. infantry, and was soon afterward promoted to be lieutenant-colonel, and in April, 1848, colonel of the 9th infantry. In 1849 he was elected to the U. S. senate for an unexpired term of 4 years, left vacant by the death of the Hon. Dixon H. Lewis. When his senatorial term expired in 1853, he retired to private life, and devoted himself to literary pursuits. In 1855, though he had previously been a member of the democratic party, he became a public advocate of the principles of the American party. In 1856 he published "Bernard Lile," a historical novel. In 1857 he published another work of a similar character, entitled "Mustang Gray." He is now (Nov. 1858) preparing "A Story of the Times of Aaron Burr and Alexander Hamilton."

CLEMENT, the name of 14 bishops of Rome or popes, and of 3 antipopes. I. **Clement of Rome**, or **Clemens Romanus**, one of the apostolic fathers, born about A. D. 30, died in 100. He is supposed to be the Clement mentioned by St. Paul (Phil. iv. 3) as one of his fellow workers, and was, according to Catholic tradition, baptized by St. Peter, and ordained bishop of Rome by different accounts in 67 or 91. He escaped the persecution of Domitian, and died in the third year of the reign of Trajan, an uncertain report being that he was thrown into the Euxine sea while in exile on the Tauric Chersonesus. He is accounted a saint and martyr in the Roman calendar, his festival being Nov. 23. His learning caused a large proportion of the ecclesiastical writings of his time to be afterward attributed to him. Among these are one epistle, and a fragment of a second, to the church in Corinth; two epistles, preserved by the Syriac churches, exalting the merits of celibacy; the two collections of apostolical canons and constitutions; and the Clementines, a narrative of his life and of his connection and journeys with St. Peter, embracing homilies, *recognitiones*, and an epitome. The genuineness of only the first epistle to the Corinthians has been generally admitted. This contains an exhortation to unity, interwoven with examples and general maxims, was often read at public worship in the first centuries, and is an interesting memorial of the primitive church. The best edition is that of Muralt, Zürich, 1848. II. **Suidger**, of Saxon birth, died at Pesaro, Oct. 9, 1047. He was bishop of Bamberg and chancellor of King Henry III., by whose influence he was elected at the council of Sutri, Dec. 24, 1046, to succeed Gregory VI. in the papal see. He crowned Henry III. emperor, held a council for the abolition of simony, and died, it is believed, by poison administered by embittered Roman factions. III. **Paolo Scolaro**, of Roman birth, elected pope at Pisa, Dec. 19, 1187, died March 25, 1191. His earlier offices were those of cardinal-priest and afterward of bishop of Palestrina. He first labored to heal the dissensions which for many years had existed between the popes and the Roman people, obliging the former to leave the city, and ratified conditions by which he was enabled to make his entry into Rome, March 13, 1188, amid great rejoicings. He afterward proclaimed a crusade against the Saracens, who had just recaptured Jerusalem from the successors of Godfrey. (III.). **Guibert**, antipope, born at Parma, created bishop of Ravenna by favor of Henry IV., elected pope by a council held at Brescia in 1080, died at Città di Castello in 1100. He was styled the pope of the Germans; excommunicated Gregory VII.; remained master of a part of the city of Rome during the pontificate of Victor III.; was driven from the city and afterward returned to it under Urban II.; and was finally expelled in 1100 under Paschal II. IV. **Guido Fulc** [illegible] of a k [illegible]
of St. Gilles, in Provenc [illegible] ceed [illegible]
Feb. 22, 1265, died at V [illegible] o. Nov.
He was successively a so [illegible]
retary of the king of F [illegible]
archbishop of Narbonne. [illegible]
bina, and legate to En [illegible]
his simple and disint [illegible]
pontifical throne. [illegible]
sanction, which ended [illegible]
the courts of France and [illegible]
jected the reformation of [illegible] calenda
by Roger Bacon; but [illegible]
cupied with the affairs [illegible] N.
Charles of Anjou in [illegible]
that kingdom and the [illegible]
Conradin, the heirs of [illegible] St [illegible]
Many of his letters have [illegible]
Bertrand de Goth, the [illegible]
Avignon, born at Uzeste [illegible]
20, 1314. He was appointed [illegible]
Bordeaux in 1300; was elected p [illegible]
June 15, 1305; transferred the [illegible]
from Rome to Avignon in 1309; [illegible]
to Philip the Fair of France, to [illegible]
chiefly indebted for his election; [illegible]
bulls which had been published [illegible]
prince by Boniface VIII.; and co [illegible]
Philip the destruction of the [illegible]
plars, who were condemned by [illegible]
Vienne in 1311 and by a bull [illegible]
year. The grand master and [illegible]
of the order were burned in 13 [illegible]
lished the *Constitutiones C* [illegible]
form a part of the canon law. [illegible]
Roger, a native of Limousin, died at [illegible]
Dec. 1, 1352. He was a Ben [illegible]
bishop of Rouen, and cardinal, and [illegible]
pope May 7, 1342. He had a c [illegible]
Edward III. of England conce [illegible]
which the king wished to [illegible]
ter. He changed the p [illegible] d
the jubilee from 100 to [illegible]
at Avignon despite the urgent [illegible]
Romans, who sent Petrarch [illegible]
Rienzi to solicit his return. [illegible]
eloquence are applauded by [illegible]
charity was exhibited du [illegible]
plague in Italy in 1348. [illegible]
dici, nephew of Lorenzo the [illegible]
cousin of Leo X., b [illegible] at [illegible]
25, 1534. Carefully [illegible]
became successively [illegible] of
prior of Capua, archbishop [illegible]
and chancellor of the church, and pope [illegible]
He formed the holy league with the [illegible]
and the kings of France and [illegible]
Charles V., which, howe [illegible]
tunes upon him. Rome was [illegible]
laged by the imperial army under [illegible]
Bourbon in 1527, and the pope [illegible]
prisoner for 7 months, when he [illegible]
guise. In 1530 he became rec [illegible]
emperor, and crow [illegible] d him at Bo [illegible]
he met F [illegible] les, and [illegible]
Catharine [illegible]

in 1534 he promulgated the
aring the marriage of Henry
with Catharine of Aragon le-
II.). **Robert de Genève**, anti-
the schism between the popes
of Rome, died at Avignon in
bishop of Cambrai and cardi-
in 1378, he was elected pope at Fondi
ls, who a few months before had
n VI. He established his see at
was recognized in France, Spain,
Sicily, the rest of Christendom
Urban VI., who is now regarded
n Catholic writers as the legiti-
VIII. **Ippolito Aldobrandini**,
Florentine family, born at Fano in
rch 3, 1605. Distinguished for his
succeeded Innocent IX. in the papal
n. 30, 1592. The principal political
f his reign was the favor which he
the league against Henry IV. of
the absolution which he gave to
h when he made public profession
He strove to make learning
ish in the church, condemned
the poet Tasso, and raised to the
ronius, Bellarmin, Du Perron,
d men. In his reign began the
concerning grace, on occasion of
n of the works of Molina, which
most distinguished theologians of
ary. (VIII.). **Gil Muñoz**, anti-
on of Barcelona when he was
by the dissenting cardinals after
Benedict XIII. (1424). He was
Peñiscola, but the reconciliation
of Aragon, Alfonso V., with Pope
put an end to his power, and by
in 1429 he terminated the schism
divided the church for 51 years.
ed the bishopric of Majorca in com-
his empty pontificate. IX. **Giulio**
born at Pistoja in 1600, succeeded
VII., June 20, 1667, died Dec. 9,
coöperated with Louis XIV. in lull-
roversy between the Jansenists and
y obtaining subscriptions to the for-
hich was styled the "peace of the
He repaired the finances of the pon-
y, and vainly sought to unite the
ces in aid of the Venetians against
who had besieged Crete. X. **Emi-**
born in Rome, July 13, 1590,
April 29, 1670, after a conclave of
months, died July 22, 1676. In his
began the controversy with France
the revenues of vacant sees. He
doned the administration of the
nt to Cardinal Paluzzi, his nephew by
XI. **Giovanni Francesco Albani**,
esaro, July 22, 1649, succeeded Inno-
v. 23, 1700, died March 19, 1721.
Louis XIV. in the war of the
ession, recognized the archduke
by constraint of the imperial troops
ed the pontifical states in 1709,
when he also saw the ancient fiefs of the church, Sicily, Sardinia, Parma, and Placentia, given to new princes. He had a lively controversy with Victor Amadeus II., king of Sicily, concerning ecclesiastical jurisdiction in that kingdom, and received with royal honors the son of James II., the pretender to the throne of England. He confirmed the condemnation of the 5 famous propositions of Jansenius by the bull *Vineam Domini* (1705); and by the bull *Unigenitus* (1713) he condemned 101 propositions extracted from the "Moral Reflections" of Quesnel. He promoted literature and the arts, and enriched the Vatican library with valuable oriental manuscripts. XII. **Lorenzo de' Corsini**, born at Florence in 1652, succeeded Benedict XIII., July 12, 1730, died Feb. 6, 1740. One of his first acts was to punish Cardinal Coscia for maladministration under the last pontificate. His reign was troubled by the disagreement between the courts of Vienna and Madrid, which excited fierce wars in Italy, and he indemnified the cities of Ferrara, Bologna, and Ravenna, which had been pillaged by the imperial troops. In 1738 he invested Don Carlos with the kingdom of Naples and Sicily, adjudged to him by the treaty of Vienna. In 1740 he restored the liberties of the republic of San Marino. He at first applauded the doctrines of St. Thomas, and gave to the schools of the Dominicans the privileges of universities, but afterward showed equal favor to the anti-Thomists. He founded in 1734 the Corsini seminary for the education and conversion of young Greeks; and his efforts for the promotion of the arts and sciences in Rome were more successful than his political enterprises. XIII. **Carlo Rezzonico**, born at Venice, March 17, 1693, succeeded Benedict XIV., July 6, 1758, died Feb. 2, 1769. He actively administered the pontifical states, and was in controversy with several of the governments of Europe throughout his reign. The first related to the Jesuits, who had been already expelled from Portugal and France, but whom he eulogized and confirmed in their former privileges by the bull *Apostolicum* (1765.) This, however, did not prevent them from being exiled soon after from Spain, the Two Sicilies, Parma, and Malta. He attempted in vain to maintain ecclesiastical jurisdiction in the duchy of Parma; and when he excommunicated Duke Ferdinand in 1768, the Bourbons acted in combination against him according to the terms of the family pact, and France seized Avignon, Naples captured Benevento, and Spain added violence to the persecution of the Jesuits. A splendid mausoleum, one of the best works of Canova, is erected to his honor in the church of St. Peter. XIV. **Giovanni Vincenzo Antonio Ganganelli**, born at Sant' Arcangelo, Oct. 31, 1705, succeeded Clement XIII., May 19, 1769, died Sept. 22, 1774. He received a learned education in the schools of the Jesuits and the convents of the Franciscans, gained distinction as a learned teacher of

philosophy, became successively director of the college of St. Bonaventura at Rome, cardinal, and councillor of Benedict XIV., and obtained a unanimous election to the pontifical throne at a time when the administration of its affairs was difficult. His predecessor, in seeking to save the Jesuits, had involved himself in a contest with almost all Europe, and in striving to maintain ecclesiastical immunities had alienated a part of his states and had diminished the respect of civil governments for the holy see. Clement XIV. suppressed the reading of the bull *In Cœna Domini*, which had irritated the Bourbon courts, but prudently and firmly resisted them when they demanded the immediate abolition of the Jesuits. After 4 years of investigation into the charges brought against the order, and when Austria united with the other Catholic powers in assailing it, he at length, July 21, 1773, granted the famous brief of suppression, *Dominus ac Redemptor*. By conciliating the princes of Europe, he recovered Avignon, Benevento, and other places which had been seized by France and Naples. He was one of the most indefatigable and sagacious of Roman pontiffs, and was admired not only for the vigor of his administration, but also for his piety and learning, the eloquence of his conversation, the splendor of his receptions, and his solicitude for the fine arts. His pretended letters, published by Caraccioli, are deemed unauthentic. The best history of his pontificate is that by Theiner, Leipsic, 1853.

CLEMENT OF ALEXANDRIA (Titus Flavius Clemens Alexandrinus), one of the fathers of the church, born probably at Athens about the middle of the 2d century of our era, died at Alexandria about 220. Early devoted to the study of philosophy, he travelled through Greece and visited Italy and Egypt in pursuit of knowledge. He was a proficient in the Stoic and Platonic philosophies, and had also listened to Christian teachers, when through the influence of Pantænus, master of the Christian school at Alexandria, he embraced Christianity. He assisted Pantænus till the persecution under Severus in 202 obliged both to flee to Palestine. He visited Jerusalem and Antioch, but had returned to Alexandria prior to 211, when he succeeded to the mastership of the school. He had many illustrious pupils, among whom was Origen. He is distinguished among the fathers of the church by his large acquaintance with and sincere admiration of the ancient Greek philosophy. Unlike Tertullian and Athenagoras, who saw in the brilliant systems of the Greek schools only an inspiration of the devil, he esteemed philosophy a divine work, and philosophers the prophets of paganism, whose lessons were to prepare the way for Christ among the gentiles, as the Mosaic dispensation had prepared it among the Hebrews. Adopting no one of the philosophical schools, and forming no connected scheme of Christian theology, his efforts to reconcile philosophy and religion tended to allegorical interpretations of the Scriptures and to speculations in which the metaphysician is more apparent than the Christian. Yet by his comparison of Christian with Hellenic ideas he exerted an important influence upon his age and upon the development of Christian philosophy. His 3 principal works are a hortatory address (Προτρεπτικος) to the Greeks, on the vanity of heathenism and the superiority of the gospel; a treatise (Παιδαγωγος) on the moral law of Christianity, rather with reference to the details of life than to general principles; and a discursive collection (Στρωματεις), containing religious thoughts, philosophical maxims, and various information on topics of antiquity. The best complete edition of his works is that of Potter, in Greek and Latin, Oxford, 1715. The best works concerning his life and doctrine are a special treatise of Neander (Heidelberg, 1811); Guericke, *De Schola quæ Alex. floruit* (Halle, 1824-'25); Eylert, *Clem. von Alexand. als Philosoph und Dichter* (Leipsic, 1832); and Bishop Kaye's "Account of the Writings and Opinions of Clement of Alexandria," London, 1835.

CLÉMENT, Jacques, a French regicide, born in 1567, killed in 1585. On Aug. 1, 1589, he sought an interview with Henry III. at the palace of St. Cloud, and while the king was reading a letter which Clément had delivered to him, he stabbed him with a knife; the king exclaimed: "Oh! the wicked monk! He has killed me. Put him to death," and died the next day. Clément was killed on the spot.

CLEMENTI, Muzio, an eminent pianist, born in Rome in 1752, died at his seat, Evesham, in the co. of Worcester, England, March 10, 1832. He was remarkable for the precocity of his genius, and went at an early age to England, where he spent the greater part of his life, occasionally making excursions to the continent of Europe. He published 106 sonatas and other piano-forte pieces, several symphonies and overtures, arrangements of some of Haydn's and Mozart's works, and a large work entitled *Gradus ad Parnassum*, on the art of piano-forte playing.

CLEMENTINE, among the Augustinian monks, a person who, in accordance with a bull of Pope Clement, becomes a private monk after having been 9 years a superior.

CLEMENTINES, the name by which part of what constitutes the canon law of the Roman Catholic church is called. Clement V., the first of the popes of Roman origin who resided at Avignon, made a collection of decretals, which consisted partly of the decrees of the general council of Vienne, at which he presided in 1311, and several constitutions which he himself published. These he collected in 7 books, and called Clementines. In 1317 his successor, John XXII., published them in due form.

CLEOBIS and BITON. See Biton and Cleobis.

CLEOBULUS, one of the 7 sages of Greece, a native of Lindus in Rhodes, and the son of Evagoras, lived in the 6th century B. C., studied philosophy in Egypt, was remarkable for per-

[illegible] and beauty, and reached a great [illegible] osed [illegible] riddles, and sayings; [illegible] on the year is [illegible] Laertius, while [illegible] it as composed by his daughter [illegible] also wrote enigmas in hexam- [illegible] of his to Solon is quoted, and [illegible] ings preserved, as: "Do good to [illegible] him a better friend, and to an [illegible] him a friend;" "Learn to bear [illegible] of fortune."

[illegible] US I., 23d king of Sparta of [illegible], succeeded his brother Agesipolis [illegible] He was sent into Bœotia at the [illegible] army, but as he returned without [illegible] thi[illegible], he was not again intrusted [illegible] till 376, when the illness of [illegible] compelled the ephors to [illegible] general-in-chief. In 374 [illegible] into Phocis with an army to aid the [illegible] repelling the Thebans from their [illegible] which he effected without any contest. [illegible] in Phocis till 371, when he receiv- [illegible] enter Bœotia, and commence offen- [illegible] ns against the Thebans. Having [illegible] 12 triremes in its harbor, he [illegible], where he was encountered [illegible] ndas, and totally defeated. He dis- [illegible] bravery in the battle, and re- [illegible] of which he died.

[illegible] a Greek astronomer, who flour- [illegible] the 1st century A. D., was the [illegible] treatise on the "Circular Theory of [illegible] Bodies," which is still extant. It [illegible] books, in the first of which Cleome- [illegible] the universe in general, of the zones, [illegible] of the stars and planets, of day [illegible] of the magnitude and figure of [illegible] Among the most interesting disser- [illegible] book are one on the magnitude [illegible] on, and one on the illumina- [illegible] eclipses of the latter orb. [illegible] best edition of it is that of C. C. [illegible] Leipsic, 1832.

[illegible] NES I., king of Sparta (520–491 B. [illegible] ed his father, Anaxandrides. Enter- [illegible] wild, he manifested great cruelty in [illegible] of Argive captives, after the great [illegible] ich 6,000 of his enemies fell. He [illegible] the Spartans who were sent, accord- [illegible] ated oracles of Delphi, to deliver [illegible] the tyranny of Hippias (510 B. C.). [illegible] d the party of Isagoras against [illegible] headed by Clisthenes; but Isa- [illegible] ing banished 700 families from [illegible] more betrayed his ambitious [illegible] attempted changes in the senate, [illegible] the people against himself; the ex- [illegible] recalled, and Cleomenes was besieged [illegible] acropolis, and compelled to capitulate. [illegible] ears after, accused of a leaning toward [illegible] by his colleague Demaratus, he bribed [illegible] of Delphi, and caused the deposition of [illegible] but he was soon banished himself, [illegible] Thessaly, then to Arcadia, where he [illegible] the people against the Spartans. Being ordered to return, he was seized with madness, and killed himself.—**CLEOMENES** III., king of Sparta (236–220 B. C.), was the son of Leonidas II. Having married at an early age the widow of Agis IV., he imitated the policy of that generous prince, who had lost his life in the attempt to restore the laws and institutions of Lycurgus. Attaching the army to his interest, Cleomenes drew its chief officers to his confidence, removed others, and commenced war with the Achæan league; caused, on various pretences, the banishment or death of distinguished citizens, and even ephors, opposed to his schemes of regeneration; put his infant colleague out of the way by poison, and reigned with his own brother, Euclidas. He assembled the people, proclaimed the abolition of all debts, resigned his own property, made a new distribution of the lands, and restored the ancient system of education, the public tables, and other institutions of Lycurgus. But the Achæans, attacked and beaten by Cleomenes, turned for help to Macedon, and Antigonus Doson entered the Peloponnesus with a large army, and routed the Spartans in the bloody battle of Sellasia, where more than 5,000 Lacedæmonians fell. Cleomenes fled to his ally, Ptolemy Euergetes of Egypt, who received him kindly, but soon died, and his son, Philopator, threw the unhappy Spartan into prison. He escaped, and attempted an insurrection, but, finding no followers, killed himself.

CLEON, an Athenian politician of the age of Pericles, the date of whose birth is unknown, but who died 422 B. C., after having been for some years a leading demagogue. He belonged to the Athenian middle class, and was a tanner. Endowed with a coarse but effective eloquence, he turned his attention to politics, and soon became one of the popular leaders, though at the commencement of his career, and as a member of the opposition, he must have been on terms with the aristocracy, Pericles being the chief of the democracy as well as of the state. After the death of Pericles, and for a period of 6 years, Cleon was the most influential man in Athens. He was able to persuade the Athenians to doom the adult males of Mytilene to death, and the women and children to slavery; but the vote was rescinded before the edict could be executed. In the "Babylonians" of Aristophanes, represented the next year, Cleon supposed himself assailed, and he retorted by commencing a suit either against the poet or the performer of the caricature; but Cleon himself was brought to trial, and forced to give up a sum of money which he had unfairly obtained from some of the subjects of Athens. These attacks, however, did not shake his power, and he successfully opposed the attempt to grant peace to Sparta, which state was anxiously desirous of bringing the Peloponnesian war to a close when a number of her citizens were shut up in the island of Sphacteria. By the grave jeers of Nicias and the rest of the peace party, he was induced to take command of the forces at Sphacteria, promising to capture or slay the Spartans within 20 days. His enemies consoled themselves with the belief that he would fail, and that failure would ruin him. But complete success crowned his labors, and the Spartans were forced to surrender, an incident that caused a great sensation throughout Greece. Although the merit of the military exploit is principally due to Demosthenes, the Athenian general, it is undeniable that Cleon's arrival on the scene of operations infused new spirit into the assailants, whose numbers were overwhelming. His influence confirmed by this exploit, Cleon was yet assailed by Aristophanes in "The Knights," in which bitter comedy he appears as the Paphlagonian steward of Demos, in whom the Athenians are typified. The poet was obliged to perform the part himself, as no one else could be found bold enough to undertake it, and showed Cleon as the most odious of men, as rapacious, corrupt, violent, and ignorant. This play obtained the first prize. Two years later Aristophanes assailed the demagogue in "The Wasps," where he is exhibited as the patron of judicial villainies. But Cleon's strange career was now drawing to a close. Appointed to the command of a fine army that was ordered to operate against the Spartan Brasidas, he was defeated and slain at Amphipolis, falling while in the act of flying from the field.—The character of Cleon has come down to us the blackest of any borne by a Greek. This is owing to the attacks of the greatest satirist and of the greatest historian of Athens, Aristophanes and Thucydides. But the former hated him for the reason of the suit instituted by Cleon on account of the "Babylonians," and the historian, because of the part which the demagogue had in bringing about his banishment. Mr. Grote has labored, with great skill and considerable success, to effect a reversal of the old judgment pronounced against Cleon, and the effect of his arguments is showing itself on the minds of the rising generation of readers and students.

CLEOPATRA, a Greek female name, signifying "the glory of her country." It seems first to have been borne by the females of the Macedonian royal race, by whom it was carried into the East, where it became an habitual royal name in the Egyptian and Syrian dynasties. There were no less than 7 women of this name who played a considerable part in mythology or history, although the notoriety of the last has eclipsed all the others. The 1st Cleopatra was a mythical personage of the heroic period, daughter of Idas and Marpessa, and wife of the mystic Meleager. The 2d was wife to Philip of Macedon, for whom he divorced Olympias, the mother of Alexander the Great, and who, after the murder of Philip, was cruelly put to death by Olympias, with her infant. The 3d was daughter of Philip and Olympias, sister to Alexander of Macedon, and wife to Alexander of Epirus, her uncle, who was slain in Italy. After her brother's and husband's decease she was sought in marriage by Perdiccas and others of the generals among whom his conquests were divided, but was put to death by Antigonus. The 4th was daughter of Mithridates, and wife of Tigranes. The 5th was daughter of Antiochus III. of Syria, wife of Ptolemy V., and mother of Ptolemy VI., surnamed in irony, from the hatred he bore her, Philometor, or "the mother-lover." The 6th was daughter of Ptolemy Philometor, and was wife of 3 and mother of 4 kings. By one of the latter, Antiochus VIII., being detected in the act of offering him poison, she was herself compelled to swallow the fatal draught. The 7th was the Cleopatra of Cæsar, of Antony, and of Shakespeare. It has been usual to speak of her as an Egyptian, as if she had been of the ancient copper-colored, straight-haired Coptic race, or at least yellow, with the glossy raven hair of the modern gypsy or Zingaro; and even Tennyson, who is scholar as well as poet, writes of her in his "Dream of Fair Women," as a queen with swarthy cheeks and bold black eyes. But nothing can be more erroneous. Her ancestors, if not of pure Hellenic, were at least of Macedonian blood: and it may be remembered that, even [illegible] the Hellenic Greeks denied the [illegible] of Macedonian people to be co[illegible] they admitted that of the k[illegible] entitled to contend at the O[illegible]pic [illegible] Cleopatra, therefore, was no Egyptian, [illegible] pure descendant of a people who have [illegible] ages furnished the most beautiful w[illegible] Caucasian race. It is remarked by [illegible] a most intelligent voyager throu[illegible] Greece, that the most beauti[illegible] seen in all his life were pe[illegible] breaking stones on the ro[illegible] tain passes of Pindus, on the con[illegible] Macedonia; and that both their fe[illegible] their forms were worthy to be the mo[illegible] dias or of Apelles. Cleopatra was the [illegible] of Ptolemy Auletes, or "the Piper," [illegible] in the early part of his reign, dis[illegible] ability, and moderation, but fell i[illegible] ity owing to his dealings with t[illegible] deposed, driven into exile, and r[illegible] Romans under Pompey the Great, [illegible] became odious for his cruelty and vice[illegible] died 4 years after his restoration, ab[illegible] leaving his kingdom by his will to [illegible] son, Ptolemy XII., whom he directe[illegible] his eldest surviving daughter, Cleo[illegible] eldest sister Berenice, who had [illegible] throne during her father's dep[illegible] been slain in battle on his resto[illegible] age of 17 she married her bro[illegible] cended the throne; but as they w[illegible] minors, and as their father had beq[illegible] to the care of the Roman people. [illegible] appointed their guardian. It [illegible] that Cleopatra commenced [illegible] course of [illegible] did libertinism by becomi[illegible] the [illegible] Pompey; but there does n[illegible] foundation for the story; nor does [illegible] the character given by Cicero to th[illegible] singular contrasts, whom he describe[illegible]

castum et severum et integrum et gravem,
an chaste and austere and upright and grave,
who, in fact, appears to have rarely if ever
ded to passion, and to have aimed at power
for the reputation than for the enjoyment
Not long after the accession of the prin-
insurrection broke out in Alexandria,
d if not caused by the ministers of
y, between whom and herself there would
to have existed a very cordial hatred; and
compelled to fly for safety into Syria,
in consequence of their wishing to se-
throne to Ptolemy alone. She was
er, disposed to yield her crown with-
, but raised an army and was march-
her husband in battle, who lay en-
on the frontiers, when Pompey, after his
at Pharsalus (48 B. C.), landing on the
was murdered by Septimius and Achillas
the young king's instructions, who hoped
ans to secure the victor's favor. This
, however, was not apt to conciliate the
of Cæsar, whose natural temper combined
policy to repudiate the bloody deed. It
ow his policy to affect moderation and
. if he did not possess them, and to
those who had predicted in case of
ding a repetition of the atrocities of
nd Marius. When the murderers there-
ought to him the head, the hand, and the
ring of his great rival, he averted his face
wept. A still stronger motive was soon
one which he seldom resisted, the in-
ce of a weakness. For, having entered
without any force worthy of con-
, that large city being in the hands of
ng king and his counsellors, Achillas and
ch Pothinus, he undertook, relying
ssisted weight of his own name, to
affairs of Egypt, and to insist on
nt of the will of the late king. To
sent word to Cleopatra to come into
. which, unable to do it openly, well
t she would be murdered without
uple by her brother's emissaries,
by a stratagem perfectly in keep-
her bold, versatile, and reckless char-
first getting into a small boat, accom-
by one Apollodorus, a Sicilian, only, and
ng him to carry her, wrapped up in a
apestry, on his shoulders, as if she had
bale of merchandise, through the gates,
palace, and into the private chamber
The romance and adventure of the in-
ding to her charms and fascinations of
rts, he was completely captivated, espous-
cause entirely, forgot all in the enchant-
of her society, and nearly lost his empire
s life rather than abandon his weakness or
ve. How his fleet was burned, the splen-
Alexandrian library consumed by chance
conflagration; how he swam the
anopus, with his sword between his
teeth, and his "Commentaries" held high above
his head, in his left hand; how the Egyptians
hung up his purple *chlamys* as a trophy in the temple of Serapis; how he maintained himself on the isle of Pharos until succors came, when he retook the city, and, Ptolemy XII., surnamed Dionysus, being drowned in the affray, established Cleopatra as queen of Egypt, although, in order to give weight to her sovereignty and to satisfy public opinion, he was compelled to cause her marriage to be solemnized with her second brother Ptolemy, surnamed Necteros, a child of 7 years old, are matters belonging only in part to the history of Cleopatra. This marriage was, as it was of course intended to be, merely nominal, and deceived no one. When Cæsar returned to Rome, after his short campaign against Pharnaces, Cleopatra accompanied him with her son by him, Cæsarion, and her little brother, titularly her husband; and it is stated that she lived with him openly in his palace, under the very eye of his legitimate wife Calpurnia. In his last grand triumph, Arsinoë, the sister of his royal mistress, walked in chains, with the Gallic Vercingetorix and the son of King Juba, at his chariot wheels. Arsinoë had, it seems, shared in the rebellion against Cæsar and her sister, with the elder Ptolemy, and had after his death been proclaimed queen of Egypt by Ganymedes; but, fortunately for her, some caprice took the Roman people, and they desired that she should be set at liberty. When Cæsar departed from Rome for his last campaign in Spain, Cleopatra returned to her kingdom and saw her first lover no more. Her reign for the next few years was prosperous and peaceful. There are no charges of licentiousness against her name, but it is asserted that, when her boy-husband, having attained his 14th year, would have claimed his share of the crown, she caused him to be poisoned. This was another royal habit of the Ptolemies and Seleucidæ, as it has since been the practice of the Ottoman sultans. During the convulsions of the world which followed the death of Cæsar, Cleopatra, it appears, kept herself as nearly neutral as she could do, yet was compelled in some measure to lend countenance and aid to Brutus and Cassius, who had the command of the whole Roman power in the east, until the battles of Philippi drove them to despair and suicide. That power now fell to the triumvir Antony. He entered Ephesus in triumph, as the eastern Bacchus, with his army disguised as bacchanals and satyrs, and a host of female bacchantes, "drunk with idolatry, drunk with wine," about his chariot wheels; and when he summoned Cleopatra to come to Tarsus and render an account of her dealings with the murderers of her first lover, she came, obedient to the behests of a master, whom she was about to make her slave. She knew her man. Her pomp, as she was rowed up the Cydnus with silver oars, in time to silver harmonies, reclining, unrobed as Aphrodite, on her golden galley, with Nereids and Cupids grouped around her, and sails of purple silk fluttering in the wanton air, among clouds of incense that concealed the river banks, has been

told in the immortal verse of Shakespeare. For 7 years the worthy couple continued a life of profligacy, caprice, and fancy, interrupted only by campaigns against the Armenians and the Parthians, in which Antony cast off the tiara and the gown, the luxury and the sloth of the oriental king, to put on the coarse *sagum* and the clouted shoe and the heavy sword, the frugality, the patience, and the fearlessness of the Roman legionary, as well as the skill of a general. His Roman veterans had endured much; but when they saw the man of the soldiers, the rude, old, roistering trooper of Cæsar, sitting by the side of the eastern queen, disguised as Osiris with his wife Isis, on golden thrones erected on a silver dais, exacting worship as the loathed and conquered gods of Egypt, and dispensing Roman provinces, as his own gift, to Persian satraps and Egyptian eunuchs, their patience failed them. Octavian armed the West against the East, and conquered. Cleopatra deserted Antony at Actium (31 B. C.), but there is no proof that she betrayed him. She had made no terms with the man to whom she is accused of having sold her lover Antony—whom, if no one else, she did certainly love—and died despairing to find mercy at his hands. Her subsequent vacillations, repentances, inconsistencies, are exactly what one would expect from a soft, luxurious, licentious woman, loving life, yet despairing of it, hoping to the last until hope was over, and then dying in her pride, desperately, but still a queen. She ordered a splendid feast to be prepared, and put an asp, which a servant had brought her, concealed among flowers, on her arm, the bite of which caused her death almost immediately (B. C. 30), in the 39th year of her age and the 22d year of her reign. "Cleopatra's power," says M. Michelet, "did not consist so much in her beauty. The height of her who was carried to Cæsar, wrapped up in a bundle, upon the shoulders of Apollodorus, could not have been very imposing. But this little wonder possessed a thousand arts and a thousand varied graces, and the gift of every language." Beside Greek and Latin, she spoke many barbarous tongues, and could give audience, without the aid of interpreters, and reply in their own dialects, to the Ethiopians, Troglodytes, Hebrews, Arabians, Syrians, Medes, and Parthians. Her voice had an inexplicable charm of soft attraction in its sounds, like an instrument of many strings, says Plutarch, which no one could resist.

CLEOSTRATUS, a Greek astronomer, who flourished in the 5th and 6th centuries B. C. He was a native of Tenedos, and is said to have introduced the division of the zodiac into signs.

CLEPSYDRA (Gr. κλεψύδρα, from κλέπτω, to steal, and ὕδωρ, water), a hydraulic clock in use among the ancients, which measured time by the quantity of water that escaped from a small orifice in a reservoir. The simplest kind consisted of a transparent vase, filled with water, graduated, and having a small opening in its bottom. As the liquid gradually escaped, its height in the vase marked the hour. Clepsydras were in use in Egypt under the Ptolemies, and a great improvement in them was made by Ctesibius, a mathematician of Alexandria, about 135 B. C. In his instrument the water was made to drop upon wheels which were thereby turned, and the motion was communicated to a small statue, which gradually rose and pointed with a rod toward the hours marked on a diagram. Clepsydras measured the time allowed for speakers in courts of justice, and they are frequently alluded to in the writings of Aristophanes, Aristotle, Plato, Demosthenes, Cicero, and Pliny, like the sands of the hour-glass in modern literature. Soon after the decline of Rome they were spread throughout Europe, but their use was abandoned after the invention of pendulum clocks. At the beginning of the 9th century Charlemagne received a magnificent clepsydra as a present from the caliph Haroun al Rashid. The fact that the quantity of water escaping from the orifice varies according to the height of the column and the shape of the vase, furnishes a difficult mathematical problem, which occupied the most skilful geometers of the 18th century, and for the solution of which Bernouilli received a prize from the French academy of sciences.

CLERC, **Jean le**, an Armini[illegible] born at Geneva, March, 19, 1657, d[illegible] dam, Jan. 8, 1786. His father gave [illegible] attention to his education. While still [illegible] he directed his energies to the st[illegible] of di[illegible] though not until he was thor[illegible] in classic literature and belles-[illegible] completed his theological course, a[illegible] opinions likely to embarrass his [illegible] Geneva, he settled at Amsterdam, fi[illegible] nian pastor, and afterward (1684) [illegible] of Hebrew, philosophy, and belles[illegible] the Remonstrant college. In 1687 he [illegible] Amsterdam the publication of his *Bibl[illegible] universelle*, two years after Bayle had [illegible] *Nouvelles de la république des lett[illegible]* dam. In this work La Croze was [illegible] of Le Clerc until the completion of [illegible] volume, after which, on account of a [illegible] ment, Le Clerc conducted the *Biblioth[illegible]* until 1693, when it was discontinued. [illegible] Le Clerc commenced the *Biblioth[illegible]* It was during the publication of this [illegible] the life-long controversy between him [illegible] commenced, its occasion being a [illegible] on comets, and his strictures on Cu[illegible] tellectual System of the Universe.' [illegible] undertook the justification of Cudw[illegible] the charges of assumption in reas[illegible] gerous tendency in doctrine, [illegible] in his dictionary. Le Clerc [illegible] publication of the *Biblioth[illegible] derne* (1726–1730). Some time [illegible] and published a work entitled [illegible] which he vindicated his own pr[illegible] with more zeal than grace. Beside[illegible] already named, he published [illegible]

books of the Bible (5 vols. folio,
10–'31), *Ars Critica* (3 vols. 1712–'30),
at number of volumes on miscellaneous
Toward the close of his life he put
t, the principal thoughts of which
y borrowed from Spinoza's *Tracta-*
o-Politicus, and which urges some
ws on the plenary inspiration of
. As a literary-theological writer,
polemic or systematic theologian,
a great influence on the religious
Protestant Europe.

Laurent, a deaf mute, one of the
eac of the asylum for the deaf
ord, Conn., born in La Balme,
ère, France, Dec. 26, 1785.
was mayor of the commune for 34
about a year old, Laurent fell
nd his head and face were badly
parents attributed the loss of
ell to this misfortune. His early
nt without instruction, as at
o schools were not common in
efforts of the abbé de l'Épée
sor, the abbé Sicard, for the in-
the deaf and dumb, were hardly
the walls of Paris. At the age
uncle took him to Paris, and
n the institution for the deaf and
abbé Sicard, though nominally its
hen in prison for his alleged hos-
blic; but Jean Massieu, him-
ute, became his teacher till the
ard, when he became a favorite
abbé. His intellectual condition,
of the uninstructed deaf mutes,
deplorable. "I had," he says,
did not think; I had a heart,
feel. My mother had endeavored
the heavens, and make me know
attempts were vain; I could com-
ing. I believed that God was a
strong man, and that Jesus Christ,
to kill us, had been killed by us,
on a cross as one of our triumphs."
lful instruction of the abbé Sicard,
proficiency, and in 1805, after
in the institution, he was ap-
, and in 1806 a salaried teacher.
for teaching was such that in a few
abbé confided to his charge the high-
in the institution, and he taught it with
cess. In 1815, while on a visit to Eng-
h his preceptor, Mr. Clerc formed the
e of the late Rev. Dr. Gallaudet,
e thither in the hope of obtaining
ion as would enable him to teach
dumb in this country. Failing in
quently visited France, and re-
ion in the language of signs from
d and Mr. Clerc; and after spend-
onths under their tuition, he per-
Clerc to accompany him to this
e to lay the foundation of deaf mute
They sailed from Havre June 15,
ived at New York in August.

Several months were spent by Dr. Gallaudet and Mr. Clerc in visiting the principal cities of the northern states, and soliciting aid for the establishment of the institution, since known as the American asylum for the deaf and dumb, at Hartford. On April 15, 1817, the asylum was opened with 7 pupils, and Messrs. Gallaudet and Clerc installed as teachers. Mr. Clerc still remains connected with the institution, and is now (1858) the oldest teacher of deaf mutes in the world, having spent 58 years in that employment. He has thrice revisited his native country, but is very happy and contented in the land of his adoption. Much of the early success of the asylum is due to his patient and assiduous labors, and the greater part of the teachers sent to other institutions for the deaf and dumb, from this mother asylum, have received their training at his hands. Mr. Clerc married in 1819 Miss Boardman, a pupil of the asylum, and like himself a deaf mute. Their children all speak and hear. The eldest son is an Episcopal clergyman of high repute at St. Louis.

CLERC, Sébastien le, a French designer and engraver, born at Metz, in Lorraine, in 1637, died in 1714. He acquired the elements of design from his father, a goldsmith, and by the advice of Le Brun devoted himself to engraving, in which he became so distinguished that at the suggestion of Colbert he was appointed engraver in ordinary to Louis XIV. Pope Clement XI. also conferred upon him the honor of knighthood. He formed his style on that of Le Brun, improving it, however, by a careful study of Raphael; and in his published works, which number between 3,000 and 4,000, and embrace every variety of subject, he has exhibited a singularly correct and elegant execution. He also published treatises on geometry, architecture, and perspective.—His son, bearing the same name, was a historical painter of some repute, and a member of the academy of painting at Paris. He died in 1763, aged 86. Many of his works have been engraved.

CLERGY (Gr. κληρος, lot, portion, heritage), a collective term commonly applied to all persons consecrated to the service of the church, because they are metaphorically said to be the portion or heritage of the Lord, as was the tribe of Levi under the Mosaic dispensation. They were also anciently termed canons, from the Greek word κανων, signifying the roll or catalogue of every church in which their names were written. Among the Jews, Egyptians, and all ancient nations, a certain class of persons was set aside for the celebration of religious worship, and the Christian church from its very birth had its appointed pastors, or even, as the Roman Catholics and other episcopal denominations hold, its 3 clerical orders of bishops, priests, and deacons. Although the distinction between clergy and laity was perhaps not so strongly marked at first as it afterward became, the separation of ecclesiastics from ordinary secular affairs, and the appropriation of means for their support, dates from a very early period. A practice of living in community, like the monks of the present day, appears, from the narrative of St. Luke in the Acts of the Apostles, to have originated with the clergy of Jerusalem, and though interrupted by persecution it was not entirely abandoned until the distinction was made between secular and regular clergy, when the former ceased to live in communities. It was introduced into various parts of Christendom, and is mentioned by Bede as having been enforced in England by St. Augustin, acting under the orders of Gregory the Great. As the church emerged from poverty, the influence of the clergy became more and more palpable. They were reverenced not only as spiritual guides and ministers of the sacraments, but as the depositaries of nearly all the learning of the age, so that by the 12th century the term *clericus* became the common designation of every person of education. Civil rulers granted them numerous privileges and exemptions. No bishop could be compelled to appear before a secular court, no presbyter could be interrogated by the torture, no lay tribunal could take cognizance of ecclesiastical matters, nor were the clergy, under the Roman empire, subject to many of the taxes laid upon the people, or called upon to fill certain public offices. They obtained temporal jurisdiction not only over their own body, but over the laity, and in the German confederation the sovereignty of many states was vested in them. They thus acquired in the process of time a preponderating influence in European politics, which, whatever may be said to its prejudice, and however much it may have been at times abused, was unquestionably the only barrier between popular rights and the encroachments of despotic princes, just as in former generations their spiritual influence over the barbarian invaders had saved Europe from slavery. During the middle ages, when the clergy formed a vast, disciplined, and wealthy body, dispersed throughout the known world, each member recognizing his proper superior, and all bowing before the supremacy of the bishop of Rome, this power reached its meridian, though from the days of the first Christian emperors to the most modern times, the respective boundaries of secular and ecclesiastical authority have been a subject of contention in nearly every country of the old world. The clergy were anciently subjected to many disciplinary regulations, the chief of which are still in force in the Roman Catholic church, and some of them are observed among Protestant denominations.—In the Roman Catholic church, the ecclesiastical body embraces a hierarchy, which claims to have been instituted by Christ himself, and of which the visible head is the pope. According to the creed of this church, the government of the faithful was committed to St. Peter as the chief of the apostles, from whose successors in the see of Rome all other bishops derive their power to rule. Beside the orders of bishops, priests, deacons, and subdeacons, there are inferior officers who fulfil various functions connected with the sanctuary; these are acolytes, lectors, exorcists, and ostiaries, forming degrees by which candidates must ascend to the priesthood. Subdeacons are obliged to take a vow of perpetual celibacy, according to an ancient regulation founded upon a still older custom of the church. At the introduction of Christianity it is held that married men were permitted to take orders, on condition of separating from their wives.—In the Greek church there are 6 orders of clergy, namely: bishop, deacon, subdeacon, lector, cantor, and liturgist. Every secular priest is required to marry a virgin before ordination, but is not allowed to marry a second time. Both Greek and Roman clergy are divided into regular and secular, the former comprising members of religious orders, and the latter all other ecclesiastics. The monks of the first ages were not necessarily connected with the clerical state; but subsequently, monks were commonly ordained priests, though partially exempt from episcopal jurisdiction, while their abbots, even if not consecrated bishops, were clothed with episcopal authority, and wore episcopal insignia. The monks of the Greek church are under the same obligation to celibacy as their western brethren.—The church of England recognizes 8 orders of clergymen, bishops, priests, and deacons, who are comprised in the 2 provinces of Canterbury and York, each having an archbishop. Each bishopric is divided into archdeaconries, and each archdeaconry into parishes. The last are filled by incumbents who, when possessing the entire tithes of the parish, are styled rectors; when sharing them with lay patrons or cathedral chapters, are termed vicars; and when receiving a stipend from impropriators of the tithes, bear the title of perpetual curates. Many of the livings are in the gift of laymen. The bishoprics are in the gift of the crown, which nominates a person to be elected by the cathedral chapter, and confirmed by the archbishop. The clergy meet by delegates in convocation at the beginning of every new parliament; though for a long period this practice was disused, the assemblage being regularly dissolved by the archbishop before it could proceed to business. A clergyman is exempt from jury duty, from attendance at a court leet, from arrest in civil suits while celebrating divine service, from filling the office of bailiff, constable, or the like; but, on the other hand, he cannot sit in the house of commons, engage in trade, or farm lands to the extent of more than 80 acres, or for the term of more than 7 years. The clerical system of the Protestant Episcopal church in America resembles that of the parent establishment, except in local regulations, and in that it has no archbishops. Some other Protestant communions recognize degrees of clerical dignity, and lay claim to an apostolic succession, but others believe in the ministry of only one order.

CLERGY. BENEFIT OF. See BENEFIT OF CLERGY.

Gr. κλῆρος, of all ecc various influence ex of learning the b order alone retain literature and sc of t scholarship. They a learned class, and with a man of science. renaissance, it was a com- for men of distinguished learn- they were not attached to the Nearly all the high offices in the in their hands, since they alone had nce requisite for fulfilling them. became more widely diffused, and became qualified to administer n clerk was gradually limited to ification of an officer in whose of records predominates; quated, except in legal papers, on of the clergy. Among classes their ecclesiastical capacity, were *acephali*, who were distinguished *ci canonici* by not uniting in a under the orders of a bishop; the brothers of common life, a congrega- ons, originated by Gerard near the end of the 14th spread throughout the Nether- phalia; and the regular clerks, nunity, with or without vows, congregations, as the Thea- and Jesuits. The ministers were formerly termed royal clerks of accounts. A large number of in the courts and government of- England were abolished by statutes 1837; but several high officers ted by this title, as the clerk who attends upon both houses and issues writs of summons to and writs for the election of the house of commons; the clerk of of commons, who endorses the bills the orders of the house, and reads nay be required in the course of pro- and the clerk of the parliaments, chief ministerial officer of the house and waits upon the king or queen to royal assent to bills, which he com- to the lords.

K. JOHN, of Eldin, died May 10, 1812, country gentleman of the last cen- a theoretical knowledge of navi- yet reputed inventor of the manœu- naval tactics called breaking the ene- Clerk's friends claim that he com- his idea through Mr. Richard At- to Admiral Rodney, and that to it the victory over the French off April 12, 1782. The assertion is re- several publications by Sir Howard D who c for Rodney himself the nœuvre was adopted put in practice by Ad- Howe, ent, Duncan, and Nelson. adaptation of steam in naval warfare has lly changed the value of the system. e his notions to the world in "An Essay Naval Tactics, Systematical and Historical," with plates, 4 parts, Edinburgh, 1790-'97, which was translated into French in 1797.

CLERKE, CHARLES, an English navigator, born in 1741, died Aug. 22, 1779, made his first voyage round the world as midshipman under Commodore Byron. In 1768 he sailed round the world a 2d time in the Endeavor, and was raised to the rank of lieutenant while on board that vessel. He was next placed in command of one of the ships which formed the Cook squadron, and on the death of Capt. Cook he succeeded to the chief command. The hardships which he was compelled to endure while searching for a passage between Asia and America, broke down his health, and he expired within view of the Kamtchatkan coast.

CLERMONT-FERRAND, a town and arrondissement of France; pop. of the former in 1856, 38,160, and of the latter 177,834. The town is the capital of the department of Puy-de-Dôme, 237 m. S. of Paris, situated on an eminence, surrounded on the S. and W. by an amphitheatre of mountains, of which the Puy-de-Dôme is the culminating point. Here in 1095 was held the celebrated council, in which Pope Urban II. incited the Christian princes and nations to engage in the first crusade. Philip Augustus united this city to his dominion in 1212. It was the birthplace of Gregory, bishop of Tours, of Pascal, and of Gen. Desaix.

CLERMONT MS. (*codex Claromontanus*), a copy of the epistles of St. Paul, including that to the Hebrews, found in the monastery of Clermont-Ferrand, in France. It is written on fine vellum, in Greek and Latin, is nearly complete, and belongs to the 6th, 7th, or 8th century. It is marked *codex D*, is now in the imperial library at Paris (No. 107), and was published in a fac-simile by Tischendorf, Leipsic, 1852.

CLEROMANCY (Gr. κληρος, lot, μαντεια, divination), an ancient kind of divination by the throwing of dice. The dice were shaken in an urn, and, after an invocation to the gods, were turned out upon a table, when the future was predicted from the disposition of numbers and characters which they presented. Among the Greeks, all dice were consecrated to Mercury, who was believed to preside over this divination, and an olive leaf was always put in the urn to propitiate him. Another mode of divination, which received the name of cleromancy, was for a person to put together a number of lots, each one characterized by an inscription, and to request the first child whom he met to draw one from them. If the lot selected was the same that the person had in mind, it was esteemed an infallible prophecy. This custom is traced back to the Egyptians, who used carefully to observe the actions and words of children, as affording something prophetic.

CLÉRY, Jean Baptiste, celebrated for his devotion to Louis XVI., and as the faithful valet of the dauphin Louis XVII., born near Versailles in 1759, died at Itzing, in Austria, May 27, 1809. When in 1792 the royal family of France were imprisoned in the temple, Cléry was one of the few servants permitted to accompany them. Louis XVI., a few days before his death, divided a loaf of bread with this faithful companion of his misfortune, the only proof of his regard which he was able to show him. Cléry wrote a journal of what passed in the temple from the captivity of Louis XVI. until the death of the dauphin; it has been several times republished.

CLÉSINGER, Jean Baptiste Auguste, a French sculptor, born at Besançon. He has obtained considerable reputation for busts of distinguished persons, and has also executed statues and historical groups. His colossal bust of "Liberty," and his statues of "Fraternity," and of Rachel and Cruvelli, in some of their principal parts, are among his best known works. He has recently been commissioned by the French government to execute an equestrian statue of Francis I. He married a daughter of Madame Dudevant (George Sand).

CLEVELAND, or Cleaveland, the capital of Cuyahoga co., O., in magnitude and importance the second city of Ohio, and one of the most beautiful and prosperous within the basin of the lakes. It is situated at the mouth of the Cuyahoga river, on the southern shore of Lake Erie, in lat. 41° 31′ 7″ N., and long. 81° 45′ 57″ W. The town proper lies on the high and commanding bluff of the lake, and is laid out with broad streets, well paved, with many trees, and occasional open squares. It is well built, and has numerous churches, hotels, and public edifices. Seen from the upper streets, the lake in summer seems a shoreless ocean studded with the white sails of water craft, and in cold winters a solitude of ice. With its wide water view, its cleanly streets, its neat tenements, and numerous spires, Clevelend presents to strangers a very attractive appearance, and is deemed one of the handsomest towns of the United States. It was the first settlement within the limits of Cuyahoga co., in that part of Ohio which has long been known as the Western Reserve. It was laid out and surveyed in Oct. 1796, and named in honor of Gen. Moses Cleaveland, a native of Connecticut. Originally the town was confined to the eastern shore of the Cuyahoga, but subsequently Brooklyn, or Ohio City, arose on the opposite side, and both parts are now united under one corporation, distinguishable only by the bridge over the river.—The growth of Cleveland has been very rapid, and is thus exhibited by the censuses: Population in 1796, 3; in 1798, 16; in 1810, 100; in 1820, 400; in 1830, 1,100; in 1840, 6,071; in 1850, 17,034; in 1858, 60,000. The rapid growth of Cleveland is due chiefly to the concentration of artificial lines of improvement at a point favorable for the distribution of products. The dates of most rapid growth, as exhibited in the above statement, were after 1830 and 1850. The first was the era of the Ohio canals, and the second that of railroads. These lines of intercommunication, limiting them only to the state of Ohio, are as follows: The Ohio canal and branches, 340 m.; Cleveland, Painesville, and Ashtabula railroad, 95½; Cleveland, Zanesville, and Cincinnati, 61; Cleveland and Mahoning, 67; Cleveland, Columbus, and Cincinnati, 254; Cleveland and Pittsburg, 192; Cleveland and Toledo, 187½. Both the canal and the railroads connect with other lateral lines of intercommunication, which greatly increase the commercial facilities of the town. These lines extend to the finest producing districts of the state, and the immediate consequence of their completion was to develop the resources of the interior and the growth of Cleveland. Its commerce rapidly extended, and manufactures began to arise. These effects are fairly exhibited in the following statistics of its commerce, industry, and wealth:

1. Tonnage of the District of Cuyahoga.

	Whole Tonnage.		Steam Tonnage.	
In 1839	8,721	tons.	3,917	tons.
" 1845	17,563	"	....	
" 1850	35,315	"	9,994	"
" 1857	68,361	"	15,977	"

2. Ship-building at Cleveland.

	Sailing Vessels.	Steamboats.	Tonnage.	
In 1839	1	..	46	tons.
" 1845	14	5	4,494	"
" 1850	9	..	636	"
" 1857	21	4	7,758	"

3. Clearances to Foreign Ports from Cleveland.

	Vessels.	Tonnage.	
Cleared in 1839	111	6,648	tons.
" in 1845	77	6,534	"
" in 1850	251	81,494	"
" in 1857	430	68,965	"

These tables show that the tonnage, ship-building, and foreign commerce of Cleveland have about doubled in the last 7 years, and more than doubled in the previous 10. The foreign commerce is wholly with Canada, to which is exported a large amount of the produce of Ohio, such as coal, flour, pork, lard, &c. The commerce of Cleveland is also rapidly increased by the immense line of lake coast, along which are constantly rising new towns and settlements. This lake trade amounted in 1857 to nearly $20,000,000.—Among the particular branches of business which have recently sprung up may be mentioned those of coal, iron, and agricultural machinery. For the prosecution of these, various and immense supplies of raw material are found within easy reach by the canal and railroads, and which, either in the raw or manufactured state, are needed throughout the basin of the lakes. Immediately south and east of Cleveland 5 counties yielded in 1857 20,000,000 bushels of coal. In one or two of these counties is also produced iron of the best varieties, including the black band ore. In that region mines have been developed and furnaces erected. The coal trade at Cleveased thus: receipts in 1840, 150,- in 1850, 2,332,604; and in 1857, being an increase of 36 per cent. This rapid increase exhibits the demand for coal on the lake coast, he United States and Canada. The of salt, not including sacks, received was 102,166 barrels. The wealth and property in Cleveland will be seen turns of Cuyahoga co., of which the s the greatest part. The valuation of . in 1845, $3,065,569; in 1850, l in 1857, $36,047,344. By far of this value was in the city of exhibits an increase of twelve- 1845.—The social and municipal insti- and are in a highly advanced s and schools are numerous common with the whole state of njoys the advantages of the liberal and school system created by the legisla- any years. In 1856 about 8,000 youth olled in the schools of Cuyahoga co., more than half were in Cleveland. cinnati, the pupils of the public schools ed, and those of sufficient talents high school. The religious in- eveland is conducted by churches inations, of which the principal in : 8 Congregationalist, 7 Presby- . 2 Disciples', 4 Methodist Epis- 1 Jewish, 1 Bethel, 3 Episco- holic, &c.; in all, about 35 here are 3 daily newspapers, 7 and 2 monthlies. Among the pub- ns and works which may be noted eland medical college; the U. S. tal, built of hewn stone, in the and which, fronting the lakes and occupies a conspicuous and beautiful the new water-works, on the highest of the river, which are surrounded grounds; the fine harbor, with the great railroad depot, at which e continually arriving and departing. is hardly a point in the union are more passengers by rail daily The 3 great lines from Buffalo, Cin- Toledo, carry to and from this passengers per annum, which, ried by the smaller lines and ts, will make nearly 1,000,000 who place in the course of transit.—The f Cleveland has received its tone and New England, and mainly from Con- which state was the original proprie- e Western Reserve. Its first settlers, e portion of those who succeeded sons of education and intelli- osed toward religion, sound knowledge. The institutions they of the same social and literary ten- those in the best parts of our coun- l no small taste has been cultivated for especially those branches of a practical r. Hence, Cleveland unites with great natural advantages the stimulation of an active-minded, enterprising people. With the natural elements of wealth around it, and the talents and enterprise to develop them, it is probable that Cleveland will continue in its career of growth and prosperity.

CLEVELAND, a S. W. co. of N. C., bordering on S. C., intersected by the First Broad river; area about 660 sq. m.; pop. in 1850, 10,396, of whom 1,747 were slaves. The soil is generally good; the surface is uneven, and marked by several considerable elevations, the principal of which is King's mountain, near the S. E. border. Productions in 1850, 335,572 bushels of corn, and 321½ bales of cotton. The county was organized in 1841, and named in honor of Col. Benjamin Cleveland. Capital, Shelby.

CLEVENGER, Shobal Vail, an American sculptor, born at Middleton, O., in 1812, died at sea of pulmonary consumption, Sept. 28, 1843. In his youth he worked as a stonecutter in Cincinnati, where the figure of an angel which he carved on a tomb attracted attention. From Cincinnati he removed to Boston, where he executed busts of Webster, Clay, Van Buren, and others. He afterwards made several similar works in Italy.

CLEVES, a circle in Rhenish Prussia, in the district of Düsseldorf, pop. in 1858, 100,000, formerly governed by counts, till in 1416 it was raised to a duchy. On the death of Duke John William in 1609 without issue, it fell into the hands of the house of Brandenburg. In 1805 it was ceded to France, and in 1806 given to Murat as part of the grand duchy of Berg. With the exception of the districts of Sevenaar, Huissen, and Malburg, which were incorporated with the Dutch province of Gelderland, the duchy was, after the fall of Napoleon, restored to Prussia in 1815.—The capital of the circle, pop. about 10,000, is situated on the rivulet Kermisdal, on a declivity near the Dutch frontier, and within 2 m. of the Rhine, with which it is connected by a canal, and about 5 m. from the Emmerich junction of the Dutch-Rhenish and Cologne-Minden railways. The town is enclosed with beautiful parks, laid out in the 17th century by Prince John Maurice of Nassau-Siegen, who is buried here. The old castle, the Schwanenburg, was the birthplace of Anne, wife of Henry VIII., also the scene of a legend which is the subject of one of Southey's poems. One of the most eminent modern Dutch landscape painters, Bernhard Cornelius Koekkoek, resides here. The dialect spoken by the common people resembles more the Dutch than the German.

CLIENT (Lat. *cliens*, according to some from *cluo*, to obey), in Roman antiquity, a man of inferior class, or lower situation, connected for mutual service and obligation with a citizen of better standing, in this relation called patron (*patronus*), or protector. This relation of client and patron (*clientela*), which seems to have been of great historical importance in the first centuries of the Roman state, is said to have been introduced by Romulus, in order to form a social link connecting the two separate and naturally antagonistic bodies of Roman society, the patricians and the plebeians. Some even believe that at the earliest period of Roman history, the names patricians and patrons were identical, and that the clients embraced the whole bulk of the plebs. But this supposition, though founded on testimony of ancient date, can hardly be proved, the history of this institution in general being involved in great obscurity. According to Dionysius, whose history contains a summary of the mutual obligations of clients and patrons, together with a historical sketch of the institution, both of doubtful accuracy, the patron was the legal adviser and paternal protector of the client, and bound to assist him in need or danger; the client was bound to filial respect and reciprocal assistance, to contribute to the portion of the patron's daughters in case he became poor, to ransom him if made captive, to vote for him or his friends when standing for office. The client and patron were not allowed to sue or to bear witness against each other, and had religiously to abstain from any injury to each other. The client accompanied his patron in war, being in this respect similar to the vassal of the middle ages, and bore his family name, partaking in the sacrifices and sepulchre of the *gens* with which he was thus associated. If he died without an heir, his patron (according to Niebuhr) inherited his property. The wife of the latter was the *matrona* or patroness of the protected family. Illustrious families found their pride in the number of their clients, and strove to gain new ones, the relation being hereditary. Freedmen became natural clients. It is stated that Romulus, regarding the connection as a religious tie, and an infringement upon its duties as a sacrilegious act, bestowed upon clients the right of unlimited self-defence against tyrannical patrons, but this can hardly be accepted. Whatever the original condition of the clients may have been, their situation was made more favorable by the constitution of Servius Tullius, admitting the plebeians to a regular share in the political affairs of the state. Though greatly modified in the course of time, the institution maintained itself down to the period of the emperors. Foreigners also often stood under the protection of distinguished Roman citizens, chosen as patrons. Even foreign states which were in alliance with Rome had their patrons in the capital of the mighty republic, and the senate often referred the decision of international disputes to the respective patrons. Similar institutions are said to have existed at an early age among other nations of Italy, as well as among some tribes of Thessaly.—In modern usage, the term client designates a person who commits his legal cause to a lawyer or counsellor.

CLIFTON, a watering place and parish of Gloucester, now forming a suburb of Bristol, England; pop. in 1851, 17,634. It is built in terraces on a steep limestone hill and commands a magnificent view. A deep chasm, through which flows the Avon, separates it from a cliff similar to the one on which it stands. Its hot baths, the temperature of which is 78° F., have been celebrated for more than 2 centuries.

CLIFTON, William, an American poet, born in Philadelphia in 1772, died in Dec. 1799. He was accomplished also in music, drawing, and field sports. His unfinished poem, the "Chimeriad," assailed the speculative notions prevalent at the period of the French revolution, and encouraged the cry of war which was at that time raised against France. One of his best papers was a pretended French MS. in prose and verse, describing a descent of Talleyrand into hell. He wrote a poetical epistle to Mr. Gifford, as a preface to his "Baviad and Mæviad," when that poem was republished in Philadelphia.

CLIMACTERIC (Lat. *annus climactericus*; Gr. κλιμακτης, a step, a stair), a name given by the ancients to a critical period in life, in which a change was supposed to occur in the organic functions. According to the Pythagoreans, the climacteric years were those which were multiples of 7; according to others, they were the multiples of 9; and the 63d year was called the grand climacteric, being the multiple of 7 by 9. This was believed to threaten life, and the Roman emperor Augustus, in one of his letters, mentioned its approach with fear. The theory of climacterics was retained by the mediæval and more recent astrologers.

CLIMATE (Gr. κλιμα, declivity, slope, region), according to Malte Brun, the assemblage of all those external physical and natural circumstances connected with each particular locality, which have a bearing upon the modifications of its temperature. This definition, adopted by M. Virey, in the *Dictionnaire des sciences médicales*, and by M. Foissac, in his work entitled *De l'influence des climats sur l'homme*, is susceptible of embracing all those phenomena involved in the complex study of physical climate, which are so varied in character, and frequently so little allied to each other, as to forbid their exact and rigorous classification. Ancient geographers divided climate into bands of the earth's surface enclosed between two parallel circles at a fixed distance from the equator. The whole space between the equator and the poles was in this manner divided into 30 different climates, denominated astronomical or mathematical. Twenty-four of these were contained in the space between the equator and the polar circle, and 6 between this circle and the poles. These were calculated from the length of the days as compared with that of the nights during the summer solstice. The first were named climates of half an hour, because in the space between the equator and the polar circle each division of climate during the summer solstice is half an hour longer than the one which precedes it. The climates comprised between the polar circle and the poles were called climates of months, because the day is one month longer in each than that which

equator the day and
divided into 12 hours, a
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until the close of the 18th
the discovery of the thermometer
ced an activity in this de-
has been attended
s. The "Trans-
for 1775 contain a
. Ho the observa-
by the society for one year, which
advance over the reasonings
prior to this period.—To Sir
iel and Alexander von Humboldt
ly indebted for the rapid pro-
science of climatology with-
century. Humboldt in 1817
celebrated treatise entitled *Des*
et de la distribution de la
globe, in which he showed that
of heat with the increase of lat-
ce more slowly on the west
world than on the east of the
ed places having an average
re during the year by iso-
ex summits of which fell
coast of the old world, and their
the east coast of the new. By
the decrease of temperature by in-
ation with its decrease by increas-
he represented the intersection of
faces with a vertical plane cutting
the earth along a meridian, and
if the examination of places of
heat and equal winter cold were
a similar manner by drawing iso-
isochimal lines, the difference be-
and continental climate would be
the general view. These isother-
differ materially from the parallels of
It is not necessary to enter into detail
the annual rotation and oblique
the earth in relation to the sun
tropical limits of the sun's apparent
south and north of the equator, and
ate winter and summer on either
, as it will be evident that the
perature obtained at different
decrease from the equator to the
the whole surface of the earth been
ting the like relations to radiant
by the unequal action of dis-
, the mean temperature of every
have been in proportion to the ra-
parallel of latitude. But the mean
of places in the same lines of lati-
very materially. The isothermal line, for example, of 59° F. traverses latitude 42° in Europe, but descends to latitude 35° in America. Hence it appears that the mean annual temperature in the latitude of Beaufort, N. C., 34° 41′, is nearly the same as that of Rome in latitude 41° 54′; and it consequently follows that other causes are in operation in both of these different localities affecting the mean temperature than nearness to or remoteness from the equator. Accurate and long continued observations are necessary to give value to meteorological facts. These have been pursued of late with much zeal. Kämtz and Mahlman have carefully represented annual isothermal lines, but Professor Dove was the first to reduce these to monthly temperatures. The observations of Professor Dove were first published in the "Transactions of the Royal Academy of Sciences" in Berlin, in 1846, and have since appeared in the "Transactions of the British Association." These observations, which are of great value, and place their author among the first of living meteorologists, fully sustain the views of Humboldt, and naturally lead to an examination of the physical formation of the earth, as a cause of this great discrepancy in climate in the same parallels of latitude.—The continent of North America in its general contour resembles a spherical triangle, of which one side stretches along the Pacific, one along the Arctic, and one along the Atlantic ocean. There are 2 axes of elevation, one on the Rocky mountains, the other on the Appalachian chain. From Labrador to California is stretched a great water-shed which extends into 4 slopes and 8 river basins. Three great ocean currents sweep along the shores, one southward in the Pacific, another eastward in the Arctic, and a third northward in the Atlantic. The Alleghany and Rocky mountain ranges divide the face of the country into the Atlantic plain and slope, which is washed by the Atlantic ocean; the valley of the Mississippi, lying between the Alleghany and Rocky mountains, watered by the Mississippi river and its tributaries; and the Pacific slope, extending from the Rocky mountains to the shores of the Pacific. This great interior valley begins within the tropics and terminates with the polar circle, embracing in its area at least three-fourths of the entire continent. A remarkable feature in the arrangement of this valley is the uniformity of its slopes. One of these stretches from the western side of the Alleghany mountains to the Mississippi river, and a second and larger extends from the Mississippi to the Rocky mountains. This high range, which obtains an elevation of 14,000 feet, largely contributes to check the winds from the Pacific, and bestow on this vast region an insular climate. The whole of the north of Europe is a great plain, extending far into Germany, and embracing a large proportion of France, most of England, all Ireland, Sweden, and a part of European Russia. In all this immense area, the peaks of Wales and Scotland, the Norwegian chain, and the Ural mountains, constitute the only important elevations.

In the south of Europe the Pyrénées, and the higher and lower Alps, opening upon the Mediterranean, exercise an important agency upon the climate of those localities within the range of their influence. Humboldt attaches great and deserved importance to these general physical features. Among the causes given by him as having a tendency to lower the mean annual temperature, he includes the following: elevation above the level of the sea, when not forming part of an extended plain; the vicinity of an eastern coast in high and temperate latitudes; the compact configuration of a continent having no littoral curvatures or bays; the extension of land toward the poles into the region of perpetual ice, without the intervention of a sea remaining open during the winter; mountain chains whose mural form and direction impede the access of warm winds.—By comparing the physical conformation of the coast of Europe with the eastern part of the United States, it will be seen that the chief agencies which control climates are directly the reverse in each country. The trade winds within the tropics give rise in both temperate zones to the west and south-west winds which generally prevail, and are land winds to the eastern coasts, and sea winds to the western coasts. The prevailing winds in Europe, as well as in America, are consequently from the west. In that portion of the continent of America embraced in the valley of the Mississippi, as well as in that stretched along the Atlantic sea coast, the effect of these winds, whose course is for an immense distance over dry land, is in summer largely to elevate the temperature, and in winter to reduce it. On the western coast of Europe, the west wind, fresh from the Atlantic ocean, produces a directly contrary effect, and establishes an equable and evenly uniform temperature throughout the year. To this cause is to be attributed the mildness of the winters and the low temperature of the summers of Ireland, England, Germany, Jersey, and the coast of Normandy, in which they furnish a striking contrast with the interior of Europe. In the north-east of Ireland, says Humboldt, lying under the same parallel of latitude as Königsberg in Prussia, the myrtle blooms as luxuriantly as in Portugal. The mean temperature of the month of August, which in Hungary rises to 70°, scarcely reaches 61° at Dublin, which is situated in the isothermal line of 49°; the mean winter temperature, which falls to about 28° at Pesth, is 40° in Dublin (whose mean annual temperature is not more than 49°), 3.6° higher than that of Milan, Pavia, Padua, and the whole of Lombardy, where the mean annual temperature is upward of 55°. At Stromness in the Orkneys, scarcely half a degree further south than Stockholm, the winter temperature is 39°, and consequently higher than that of Paris, and nearly as high as that of London. Even in the Faroe islands, at latitude 62°, the inland waters never freeze, owing to the favorable influence of the west winds and of the sea. On the charming coast
of Devonshire, near Salcombe bay,
been termed on account of the mild
climate the Montpellier of the north,
Americana has been seen to blossom
air, while orange trees trained
and only slightly protected
found to bear fruit. There, as
zance and Gosport, and at Cher
coast of Normandy, the mean wint
ture exceeds 42°, falling short by on
the mean winter temperature of
Florence. In comparison w
coast of Europe, it is believed that
coast of America is somewhat cold
more equable than the eastern
western continent.—The ocean cur
exercise so important an influence
gation of the seas, have an intim
with the climatic relations of the
That of the gulf stream is well
modore Perry has recently call
the existence of a similar warm
Pacific, apparently deriving its
Japanese coast, but probably
below that point. This cur
doubtless modifies in a grea
mate of the Pacific coast, is sup
duce a less sensible effect upon
perature than the gulf stream of the
A. Keith Johnston says: "The
Asiatic coast correspond with th
along the Atlantic; and those of
Vancouver, and Washington, are
those of western Europe and the B
The climate of California re
Spain—the sandy plains and
Lower California reminding one
its deserts between the same paral
elastic atmosphere and bracing
Pacific climates," says Blodget,
striking difference from those of
states. All residents concur in
more favorable to physical and
than any they have known."
the United States," p. 200.) Acc
servations made at West Point, N.
Trumbull, Conn., both in lat. 41°
1½° of longitude apart, the winters
milder and the summers 1° cooler at
bull than at West Point, the for
upon the sea, and the latter inland.
ence is still more manifest in that
the North American continent
the boundary line of the Unit
Nova Scotia, which is nearly
water, the thermometer seld
temperature higher than 88° in
than 8° below zero in winter;
occupying the same parallels of
thermometer in summer rises as
and occasionally 100°, while in
of 30° below zero is frequent,
range of the temperature during
months is from 8° to 30° below
tion above the level of the sea
cided influence on climate. Th

of the atmosphere is found to decrease in successive and regular gradation as it leaves the sea's level, so that in the ascent of lofty mountains within the tropics the traveller experiences every change of weather, from the oppressive heat of the summer's sun on the plain below, to the piercing cold of eternal frost on the lofty summit above. The region of perpetual spring in the neighborhood of Potosi, in South America, is remembered with emotions of delight by every traveller who has ascended this mountain range. The declension of temperature has been found, with occasional variations, to equal one degree for every 300 feet in temperate climates. This subsidence of temperature with elevation is doubtless dependent on the extreme rarity of the atmosphere at a distance from the earth, and the consequent facility with which it is permeated by heat, as well as the radiating power possessed by the earth, which enables it to return to the contiguous atmosphere a portion of the solar rays it had previously absorbed. The atmosphere is condensed in proportion to the force with which it is compressed, and expands in exact ratio to the diminution of that force. It follows that, the superincumbent strata of air being compressed with greater force in its most dependent part, and that dependent part being nearest the earth's surface, its density will be there greatest, and this density will diminish in exact proportion to the ascent of the column of air. Now the atmosphere when under a certain compression has a certain capacity for latent heat, which is increased by a diminution of the compression, and diminished by its increase. If a column of air at a certain distance from the earth receive a certain number of the sun's rays, and then be brought suddenly down to occupy a denser medium, its particles becoming compressed, a portion of the latent heat becomes sensible and is given off to surrounding bodies. The following observations, made by Mr. Green during an aërial voyage, exhibit this declension of temperature. The thermometer at the earth's surface indicated a temperature of 74°; at an elevation of 2,952 feet, 72°; at 7,288 feet, 70°; at 9,993 feet, 69°; at 11,059 feet, 45°; at 11,293 feet, 38°; making a difference of 36° between the earth's surface and the highest altitude attained, or about 1° for every 311 feet. Sir John Leslie and Humboldt believe that the diminution is much more marked near the surface of the earth than is here indicated.—Moisture exercises very marked influence over climate. Taken as a whole, all the gentle slopes on the American continent descend eastwardly toward the Atlantic, while the abrupt ones rise on its western aspect. In this respect there is a manifest difference between this continent and that of Europe, which gradually declines westwardly toward the Atlantic. This general configuration necessarily gives to Europe a moister as well as a more temperate climate than that of America in the same parallels of latitude. This would be much more obvious were it not for the admirable compensation made by the gulf stream and the trade wind that accompanies it. From this source not only the Atlantic coast, but the Mississippi valley, which is exposed at its southern extremity to the gulf of Mexico, derives a large proportion of its moisture. The trade wind fresh from the gulf stream not only spreads itself along the whole Atlantic coast, and upon the slopes of the Alleghanies, loaded with vapor, but distributes its favors, in a less degree it is true, to the Mississippi valley through its great inlet on the gulf of Mexico. Were this interior valley exposed to the winds from the Pacific, instead of being shut off from them by the lofty summits of the Rocky mountains, it would doubtless have a softer and more equable climate than it now possesses; and were its source of moisture from the gulf stream permanently intercepted, instead of being the fruitful region it now is, it would present itself to the eye of the traveller as a barren and unfruitful desert, as little fitted for the abode of man as the vast arid plains which are now traversed in a journey from the Mississippi river to the Rocky mountains. (See METEOROLOGY.)

CLIMAX (Gr. κλιμαξ, a scale), the arrangement of the several members of a discourse in such a way that they rise successively in dignity and importance, each of them giving additional force to the argument. The anti-climax is the reverse figure, and produces the style known as bathos.

CLINCH, a S. co. of Georgia, bordering on Florida and drained by the Suwanoochee river. It has been recently erected, and the state census furnishes no statistics respecting it. In 1856 the real estate of the county was valued at $584,542.

CLINCH RIVER rises among the hills of S. W. Virginia, passes into Tennessee, flows through the valley between Clinch and Powell mountains, and unites with the Holston at Kingston, to form the Tennessee. Its length is estimated at above 200 m., for more than half of which it is navigable by small boats.

CLINGMAN, THOMAS L., an American senator, born in Huntsville, Surry co., N. C., of a family of revolutionary distinction, was graduated with high honors at Chapel Hill university, and studied the law. But just as he was about to enter upon the practice of his profession, the people of Surry elected him to the state legislature, where he served with distinction. In 1836 he retired, and removed his residence to Asheville, Buncombe co., where he still resides. Not long afterward he was elected to the state senate. In 1843 he was elected to congress over the Hon. James Graham, and, with the exception of one term, he was a member of the house of representatives for a continuous period of 13 years, during which he shared in almost all important debates, and, especially as the chairman of the committee on foreign relations, acquitted himself with ability. During his first week in congress, Mr. Clingman had a parliamentary encounter with the Hon. Henry A. Wise, wherein he displayed great readiness and self-possession. His next effort was a speech against the so-called 21st rule, which was extensively published, and his reply to what was known as Duncan's "coon speech" also made a decided impression. At the 2d session of the 27th congress, he delivered his speech on the causes of Mr. Clay's defeat, which led to a duel with the Hon. W. L. Yancey, of Alabama. He has also spoken on the slavery question, Gen. Scott's conduct in Mexico, the sectional contest between the North and South, the tariff, the future policy of the government, against commercial restrictions, on mediation in the eastern war, Texas debts, British policy in Cuba, and especially against the Clayton and Bulwer treaty. During a service of 12 years on the floor of congress, when at Washington, he attended every day's session of the house, without a single exception. In politics he was originally elected as a whig, and represented one of the most decided whig districts in the union. Afterward he united himself with the democratic party, and represented finally one of the most decided democratic districts of the state. He has made valuable contributions to geology and mineralogy, his name frequently appearing in "Silliman's Journal" as one who has brought to light many interesting facts connected with the mountains of North Carolina, the highest peak of which he has explored and measured, and which now bears his name. In 1858, on the appointment of the Hon. Asa Biggs as U. S. judge for the district of North Carolina, Mr. Clingman was chosen by the governor of that state to fill the vacancy occasioned thereby in the U. S. senate.

CLINIAS. I. The father of Alcibiades, fought at Artemisium against the Persians, in a trireme built and manned at his own expense. He was slain at the battle of Coronea, 447 B. C. II. A Pythagorean philosopher, a contemporary and friend of Plato. He was a native of Tarentum, and is said to have been in the habit of assuaging his anger by playing on the lyre. Stobæus has preserved a fragment of his writings.

CLINOMETER (Gr. κλινω, to incline, and μετρον, a measure), an instrument for measuring the angle made by any plane with the horizontal, and commonly used for determining the dip of beds of rock, and the inclination of veins. It is made in various forms, as in that of a rule with a graduated arc upon the hinge to mark the angle of opening of the 2 arms. A spirit level attached to one arm serves to keep this in the horizonal plane, while the other is opened to coincide with the plane of the stratum of rock. Another convenient form is made by suspending a small metallic index upon the pivot of the needle of a pocket compass, which, by swinging freely, indicates the vertical line. The box is either square, or one side is furnished with a projecting limb, which forms a tangent to the circle at the zero point of the graduation. This tangent line being applied to a horizontal plane, the index marks zero; upon an inclined plane it marks the number of degrees this deviates from the horizontal.—In the French marine service, a clinometer is employed for determining the inclination of the keels of vessels at sea, in order to trim them for that draught of water fore and aft at which they are known to sail best. The instrument adopted by the royal marine is that of M. Coninck, described in the *Dictionnaire du commerce et des marchandises* of M. Perpigna. It is made of 2 elongated glass bulbs, placed about 18 inches apart, and connected by a glass tube proceeding from their bases. Each bulb is half filled with mercury. From the upper extremity of each a tube proceeds, parallel with that at the base to within an inch of meeting, where they turn up in a vertical direction. To these vertical tubes is attached an index or vertical, which supports a scale of 2 degrees, divided into 120 minutes. Alcohol colored red is poured into the tubes until it fills them up to the point marked zero upon the scale. It rests upon the mercury, which transmits to the alcohol its oscillations. A bulb upon the summit of each of the tubes receives the alcohol when the violent movement of the ship causes it to flow over the open ends of the tubes. The angle of inclination being determined by the scale, and the length of the keel being known, the difference of draught at each extremity is easily calculated.

CLINTON, the name of counties in several of the United States. I. A N. E. co. of N. Y., bordering on Lake Champlain, bounded S. by the Riviere au Sable; area about 952 sq. m.; pop. in 1855, 42,482. The surface near the lake is level, but becomes hilly and mountainous toward the western part of the county. Timber is abundant, the soil is fertile, and agriculture forms the principal occupation of the inhabitants. The mountains contain valuable mines of iron, the ore being abundant, and of superior quality. In 1855 the productions amounted to 92,568 bushels of Indian corn, 59,311 of wheat, 276,080 of oats, 885,492 of potatoes, 48,241 tons of hay, 891,431 lbs. of butter, and 105,906 of cheese. Manufactures are carried on to a considerable extent. In 1855 there were 19 flour and grist mills, 110 saw mills, 45 churches, 169 school houses, and 5 newspaper offices. Dannemora, in this county, is the seat of a state prison, which in 1855 had 258 inmates. The convicts are employed in digging, separating, and preparing iron ore for the neighboring furnaces. Organized in 17[illegible], and named in honor of George Clinton, governor of New York. Capital, Plattsburg. II. A N. central co. of Penn., traversed by the W. branch of the Susquehanna, abounding in timber, coal, and iron; area about 1,000 sq. m.; pop. 11,207. The surface is quite mountainous, the Alleghany ridge extending along the eastern border. The productions in 1850 were 191,[illegible] bushels of wheat, 115,760 of corn, 6,896 tons of hay, and 140,456 lbs. of butter. The transportation of the productions of the county is effected by means of the West Branch canal. Organized

and named in honor of De Witt Clinton,
of New York. Capital, Lock Haven.
co. of Ky.. bordering on Tenn., bound-
th d river; area about 350
,889, of whom 262 were
is hilly, Poplar mountain in
feet high, being the principal
soil is fertile, though little im-
iron are abundant, and there is
throughout the county. Pro-
1 bushels of corn, 11,012
of tobacco. Number of
ools, 1,563. Capital, Al-
A co. of Ohio, area 467 sq. m.,
l a fertile soil; pop.
in 1850, 1,224,517
orn, 110,561 of wheat, 127,862 of oats,
of hay. and 407,048 lbs. of butter.
49 c ches, and 3,920 pupils in
Named in honor of George
Wilmington. V. A cen-
drained by Grand, Maple, and
ers; area 576 sq. m.; pop. in
surface is flat, and covered
e forests. The soil is fertile, and
ced 53,554 bushels of wheat, 61,-
and 39,097 of oats. Number of
public schools, 1,017. Capital, De
A N. W. central co. of Ind., area
m. of rich level country, in the fer-
he Wabash; pop. in 1850, 11,869.
eption of a few prairies, the
which is 12 m. long and 4 m. wide,
covered by dense forests. Cat-
swine are among the staple
in 1850 the county yielded 710,-
of corn, 95,889 of wheat, 84,198 of
8 tons of hay. There were 4,710
ic schools. Capital, Frankfort.
l co. of Ill., area 420 sq. m.,
of fertile prairies, interspersed
est; pop. in 1855, 6,828. Kas-
al. Beaver, and Crooked creeks
s. Productions in 1850,
corn, 19,682 of wheat, 71,508
7 lbs. of butter. There were 5
1 875 pupils in the public schools.
yle. VIII. A N. W. co. of Mo., area
occupied chiefly by prairies, but in
well wooded; pop. in 1856, 5,946,
were slaves. Sandstone and lime-
the soil, which is generally fer-
ns in 1850, 299,070 bushels of
of wheat, 48,469 of oats, and 198
Capital, Plattsburg. IX. An
owa, bordering on Ill., bounded E. by
pi river; area 696 sq. m.; pop. in
Prairies and forests are scattered
e, and the soil is generally pro-
in 1856 the county yielded 8,072 tons
15,592 bushels of wheat, 159,959 of
39 of corn, 79,396 of potatoes, and
of butter. Capital, De Witt.
, the name of several towns and vil-
United States. I. A post village of
, in a small township of its
own name, on Nashua river; pop. in 1855, 3,680. It is a thriving manufacturing place, and contains a number of large mills and factories, well supplied with water power by the Nashua river. The Lancaster or gingham mills are thought to be the most complete of the kind in the United States. The buildings connected with this establishment occupy 4 acres of ground on the bank of the stream, contain 21,000 spindles and 600 looms, and produce daily 18,000 yards of stuff. About 800 operatives are constantly employed here. Adjoining the other buildings is a dye-house, said to be the best in the world. The capital of the company is $900,000. The Clinton company manufactures annually 1,200,000 yards of coach lace, and 800,000 yards of tweeds and cassimeres; capital, $400,000. The Bigelow carpet company produces every year over 150,000 yards of superior Brussels carpeting, and the Lancaster quilt company turns out annually 70,000 counterpanes. There are also some manufactories of machinery. The township, which comprises an area of only 5,000 acres, was formed of part of Lancaster in 1849. There are a number of good schools within its limits, and the village contains some handsome churches. II. A post village of Kirkland township, Oneida co., N. Y., built on both sides of Oriskany creek, and on the Chenango canal; pop. in 1855, 1,174. It is the seat of Hamilton college, and contains several churches. III. A post village of Clinton township, Hunterdon co., N. J.; pop. of the township in 1855, 2,783. It is situated on the south branch of Raritan river, an excellent mill stream, and contains several mills and factories. The surrounding country is very productive, and highly cultivated. IV. A flourishing post village and capital of E. Feliciana parish, La.; pop. in 1850, 1,252. It is inhabited mostly by rich planters, and in 1851 exported 16,000 bales of cotton. A railroad connects it with Port Hudson on the Mississippi.

CLINTON, Charles, the ancestor of the Clintons in New York, born in the county of Longford, Ireland, in 1690, died in Ulster, now Orange co., N. Y., Nov. 19, 1773. His grandfather was an adherent of Charles I., and after the defeat of the royalists fled for refuge to the north of Ireland; and his mother was daughter of a captain in the parliamentary army. Having determined with a number of his friends to emigrate to America, he chartered a ship, and sailed for Philadelphia, May 20, 1729. After a passage marked by the attempt of the captain to starve the passengers in order to possess their property, and in which after the death of several, among whom were a son and daughter of Mr. Clinton, it was proposed, but not attempted, to wrest the command from the captain, he was landed with his companions, Oct. 4, at Cape Cod. The place for a permanent settlement was selected in the spring of 1731 in Ulster co., N. Y., about 6 m. W. from the Hudson river, and 60 m. N. from New York city. Mr. Clinton was chiefly occupied as a farmer and land surveyor, but was also judge of the county court, and in 1756 was appointed lieutenant-colonel, and served with 2 of his sons in the expedition against Fort Frontenac.

CLINTON, De Witt, an American statesman, son of James Clinton and Mary De Witt, born at Little Britain, New Windsor, Orange co., in the colony of New York, March 2, 1769, died in Albany, Feb. 11, 1828. His descent on the father's side was from English ancestors long domiciled in Ireland, and on the mother's side he was of French extraction, through a sojourn of the family of some duration in Holland. While yet young he married Maria Franklin, who brought him a liberal fortune, and who died in 1818. In the succeeding year he was married to Catharine Jones, who survived him. He had a commanding stature, highly intellectual features, and a graceful form, set off with severe and dignified manners. He combined in a rare degree vigor, versatility, and comprehensiveness of mind, with untiring perseverance in the exercise of a lofty and unconcealed ambition. His education was begun in a grammar school near his home, continued at the academy in Kingston, Ulster co., and completed at Columbia college, where he bore away the college honors in 1786. He immediately engaged in the study of the law under the instruction of Samuel Jones in the city of New York, and was admitted to the bar in 1788. His ardent temper and earnest ambition carried him at once into the political field, and his sentiments, sympathies, and affections determined his position under the banner of his kinsman George Clinton, the chief within the state of the republican party. While the question of the adoption of the federal constitution was yet a subject of popular discussion, he proved his zeal and controversial power by writing a series of letters signed "A Countryman," in reply to the celebrated letters of the "Federalist." He attended the state convention which adopted the constitution, and reported its interesting debates for the press; and forsaking his profession at once and for ever, he became the private secretary of George Clinton, then governor of New York. In this position he maintained the cause of his kinsman and that of the republicans by such a vigorous use of the press, that he immediately came to be regarded as its leading and most prominent champion. About this time he was appointed one of the secretaries of the newly organized board of regents of the university, and secretary of the board of commissioners of fortifications of the state. On the retirement of George Clinton in 1795, and the accession of Mr. Jay to the chair of state, De Witt Clinton relinquished his offices, but did not relax his championship of the republican cause in opposition to the administration of Mr. Jay in the state and to that of John Adams at Washington. With all his vehemence of partisan feeling, he nevertheless adhered to the line of patriotic conduct he had early marked out for himself. Thus, while assailing the administration of Mr. Adams and the federalists for their alleged hostility toward France, he [illegible]
and disciplined an [illegible]
held in readiness for th[illegible]
in the event of the o[illegible]urrence [illegible]
generally anticipated. [illegible]
he applied himself dili[illegible] to [illegible]
ural philosophy, n[illegible]
ences. Mr. Clinton was [illegible]
the lower house of the legislature [illegible]
by the city of New York. in 1797, [illegible]
next year he was ch[illegible] by [illegible]
the southern district [illegible]
senate of the state for a t[illegible]
republican party, triumphing in
1800, carried also a majority [illegible]
York, although John Jay [illegible]
office. Official patronage [illegible]
its first constitution, committe[illegible]
together with a council consisting [illegible]
from each district, chosen by a vote of [illegible]
of assembly. The governor [illegible]
council, and habitually exercised [illegible]
right of nomination, leaving only [illegible]
the power to confirm or reject. [illegible]
administration of George Clint[illegible]
when in a majority in the [illegible]
for each member a right of [illegible]
nate with that of the gove[illegible].
tension was disallowed by Gov. C[illegible]
original practice remained. De W[illegible]
1801 became a member of the [illegible]
by a republican majority. He [illegible]
the right of nomination for hi[illegible]
sociates. The governor denied [illegible]
ed the council, and never afterward [illegible]
it. He submitted the subject to the [illegible]
and appealed to that body for a [illegible]
law. Mr. Clinton vigorously defende[illegible]
tion assumed by him in the council. [illegible]
lature referred the matter to a [illegible]
the people. The republican [illegible]
nated in that body, and the [illegible]
amended so as to effect the obje[illegible]
Clinton had aimed. It was a sea[illegible]
hended invasion; Mr. Clinton [illegible]
efficient in securing the [illegible]
fence. The public health was [illegible]
ened by the approach of con[illegible]
he was unremitting and j[illegible] in
the necessary sanitary laws [illegible]
He urged improvement of th[illegible]
to agriculture, manufactures, a[illegible]
bored to stimulate the great and [illegible]
ful effort of the time to bri[illegible]
an agent of navigation, a[illegible]
talents and influence in melio[illegible]
imprisonment for debt, and [illegible]
ery. At the early age of 33 his [illegible]
service in the senate of [illegible]
by his appointment to a [illegible]
the United States. He [illegible]
through 2 of its annual se[illegible]
though short, sufficed to en[illegible]
upon the country a con[illegible]
ty, and to augment, as [illegible]
of, his already eminent re[illegible]

[illegible] nt t[illegible] was an elaborate, ex-
[illegible] speech in favor of
[illegible] of a high popular
[illegible] st Spain, [illegible]ting from her vio-
[illegible] ulations for commercial priv-
[illegible] f the United States on the
[illegible] i, the territory of Louisiana
[illegible] acquired by the United
. Clinton resigned his place in the
to assume the office of mayor of the
[illegible] York, under an appointment made
[illegible] on and a republican council of ap-
[illegible] 08, that distinguished man hav-
in been elected to the office of gov-
[illegible] ined undisturbed in the mayoral-
until 1807, when he was removed.
[illegible] ointed in 1809, was displaced in
[illegible] stored in 1811, and thenceforward
[illegible] herein until 1815. Within this period
[illegible] 12 years, Mr. Clinton was also a
of the senate of the state from 1805
[illegible], and was lieutenant-governor from
[illegible] 8, and during a portion of that time
[illegible] seat in the council of appointment.
[illegible] eorge Clinton, who had been known
to the presidency for many years,
[illegible] ce-president of the United States,
[illegible] er, by reason of his advanced years,
[illegible] cuous. De Witt Clinton,
tra[illegible] on, rose to the same emi-
[illegible], and came to be regarded
candidate of the republican
[illegible] state of New York for the
[illegible] bounds the range of ambition in
[illegible]. Not at all abating either his per-
[illegible] or his proscriptive severity to-
[illegible], he encountered at their hands
[illegible] d retaliation, fierce, violent, and ap-
relentless. A dangerous rival disap-
[illegible] hen Aaron Burr sank under the sus-
[illegible] intrigues against Mr. Jefferson in the
of 1800, and the reproaches of malice
[illegible] t in the duel with Hamilton in
[illegible]. Clinton was successively brought
[illegible] ude of distrust toward Lewis and
[illegible] successors of George Clinton in
[illegible] governor. He hesitated at first to
the system of commercial restrictions
by President Jefferson, and questioned
[illegible] f the course of Madison immedi-
[illegible] o the declaration of war against
[illegible]. It is beyond all doubt now that
[illegible] was eminently brave, and that he
[illegible] ry with a devotion that knew no
[illegible] n her safety or welfare required
at [illegible] hands. But there was at that
[illegible] of the federal party which con-
measures of the government so se-
their own loyalty to the country was
[illegible] ally questioned, and their conduct,
were their motives, had a tendency
[illegible] e the public enemy, and so to em-
administration. This brought sus-
[illegible] whole federal party, although as
loyal and patriotic, and it suited
[illegible] Mr. Clinton's opponents to impute his hesitation and reserve to the influence of sympathies with the federalists. Day by day, therefore, old republican associates and followers separated from him, and in their places federalists, who saw that there was no longer any hope of effectually serving their country under their own dilapidated organization, and who believed him as patriotic as the statesmen who were in power, and much wiser than they, lent him indirectly their sympathy and cautious support. It was in this unlucky conjuncture that Mr. Clinton, whose aspirations to the presidency had long been known, concluded that the time had arrived when they ought to be and could be realized. Mr. Madison's first term was to expire in 1813, and his successor was to be elected in 1812. The republican caucus at Washington disallowed Mr. Clinton's pretensions, and renominated Mr. Madison. Mr. Clinton still retained the confidence of the republican party in his own state as an organized political force, though it was sadly demoralized. He received a nomination at the hands of the republican members of the legislature. The federalists made no nomination, and indirectly gave him their support. He received 89 electoral votes, while Mr. Madison received 128, and thus was reëlected. This defeat was disastrous to Mr. Clinton. The republican party of the state of New York shrank from his side, and at the first opportunity in 1813 displaced him from his office of lieut.-governor, leaving him only the mayoralty of the city of New York. But in fact he had changed not his principles, policies, or sympathies, but only his personal relations. He had attempted to gain the presidency, not to overthrow the republican party, but to reëstablish it, as he thought, on a better foundation; not to favor the public enemy, but to prosecute the war against him, as he thought, with greater vigor and effect. The result was a complexity of relations that seemed to render all further ambition hopeless. He was a republican disowned by his party; and though not a federalist, he was held responsible for all the offences imputed to them, without having their confidence, or even enjoying their sympathy. His fall seemed irretrievable. Nevertheless, he had been fortunate during the period which we have been reviewing in laying broad and deep the foundations of a popularity that at no distant day might be made to maintain a personal party, which would long perplex and often confound the adversaries who now exulted over what was thought his final ruin. The city of New York had now begun to feel the beneficial influence of the centralization of commerce under the operation of the federal constitution, and public spirit was profoundly awakened. The deficiencies of its municipal laws, of its defences, of its scientific and literary institutions, of its institutions of art, and the absence of most of the elements of a metropolitan character, were generally felt and confessed. Enlightened, liberal, and active men were moving in a hundred ways to make the city worthy of its high, but newly discovered

destiny. Only some lofty, genial, and comprehensive mind was wanted to give steadiness and direction to these movements. De Witt Clinton supplied this want. He associated himself on equal terms with other citizens who engaged in the establishment of schools designed to afford the advantages of universal primary education; with others who founded institutions for the study of history, for improvement in art, for melioration of criminal laws, for the encouragement of agriculture, for the establishment of manufactures, for the relief of all forms of suffering, for the correction of vice, for the improvement of morals, and for the advancement of religion. In all these associations he subjugated his ambition, and seemed not a leader but a follower of those who by their exclusive devotion were entitled to precedence. They derived from him, however, not only liberal contributions by his pen, by his speech, and from his purse, but also the aid of his already wide and potent influence, and the sanctions of his official station and character. He carried the same liberal and humane spirit into his administration as chief magistrate of the city. By virtue of that office, he was not only the head of the police, charged with the responsibilities of preserving order and guarding the city from external dangers, but he was at once a member and president of the municipal council, of the board of health, of the court of common pleas, and of the criminal court. He appeared in all these various characters always firm, dignified, intelligent, and prepared in every exigency; the friend of the poor, the defender of the exile, the guardian of the public health, the scourge of disorder, the avenger of crime, the advocate of civil and religious liberty, and the patron of knowledge and virtue. As a member of the senate of the state and lieutenant-governor, he exercised the functions not only of a legislator, but also of a judge of the court of dernier resort; and amid all the intrigues and distractions of party he bore himself in those high places with the dignity, and exercised the spirit, of a sagacious, far-seeing, and benevolent statesman. Especially he arrested the popular prejudice against himself in regard to his loyalty, by the utmost liberality and efficiency both as mayor and legislator, in securing adequate means for public defence, by providing loans to the government, by voting supplies of materials and men, and by soliciting the military command to which his admitted courage, talent, and influence seemed to entitle him. But beyond all this, he adopted early and supported ably and efficiently the policy of the construction of canals from Lake Erie and Lake Champlain to the tide water of the Hudson, and showed to his fellow-citizens, with what seemed a spirit of prophecy, the benefits which would result from those works to the city, the state, and the whole country, in regard to defence, to commerce, to increase of wealth and population, and to the stability of the union. He was so successful in this that he was deputed, with others, in the year 1812, by the legislature of the state, to submit that great project to the federal government at Washington, and solicit its adoption or patronage of the policy as a national measure. That government, happily for the state, and fortunately for him, declined, and the occurrence of the war of 1812 put the subject to rest, to be revived at a more propitious season. The intellectual vigor, the impartial spirit, and the energetic resolution which Mr. Clinton displayed in these various duties, awakened profound and general admiration; while the manifest beneficence of his system excited enthusiastic desires for material and moral progress. He had thus become identified even in the darkest hour of his political day with the hopes and ambition of his native state, and with the hopes and ambitions of all the other states which waited to be benefited directly by her movement, or to emulate her example. By a system chosen and perfected by himself, and exclusively his own, he had gained a moral position similar and equal to that which Hamilton had won before him when, the tide of popular favor having deserted him, and left him destitute of power and influence, he still stood forth an isolated figure on the canvas, attracting an admiration and exciting an interest which his successful rivals feared to contemplate. But it was not for Mr. Clinton to reascend the political ladder until he had released his hold on the lowest step, and had once more touched the ground. His opponents made haste to dislodge him from that last foothold. In Jan. 1815, he was removed from the mayoralty by a council of appointment in the interest of the republican party. Fortune had gone with greatness, and he sunk into private life without even the means of respectable subsistence. The severity of this proscription, coupled with the greatness of his fall, as well as of his character, awakened regrets and sympathies among large classes who did not stop to consider how rashly he had tempted fortune, or how ruthlessly he had wielded the axe against those who had now precipitated him to the ground. In the autumn of that year, and in the obscurity of a retreat to the country, he prepared an argument in favor of the immediate construction of the Erie and Champlain canals. Never has there appeared, in this or perhaps in any other country, a state paper at once so vigorous, so [illegible], so comprehensive, and so conclusive. It was couched in the form of a memorial from the citizens of New York to the legislature of the state, and was deferentially submitted to a public meeting for their adoption. The city adopted the memorial, and appealed to the citizens of the interior portions of the state. They responded with enthusiasm; other states and territories, expecting either direct benefit, or wishing only to follow the lead of a power so respectable as New York in similar enterprises, lent their approving voices. The policy was fron that moment certain of success. It was hindered only by the political prejudices which hung around its advocate. His opponents

[illegible] ato new activity. With
[illegible] affected to consider
[illegible] not merely a new re-
[illegible] one original
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[illegible] acious [illegible] enlightened
[illegible] with the [illegible] irs of the
[illegible] of New York had, with
[illegible] tness, indicated and
[illegible] policy, and the state
[illegible] early [illegible], made demonstra-
[illegible] ad [illegible] and had recom-
[illegible] re the war to
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[illegible] to [illegible] for his adversaries
[illegible] have preferred
[illegible] him [illegible] not merely the
[illegible] inv[illegible] of the system
[illegible] ults were already triumph-
[illegible] He appeared at Albany,
of the legislature, to commend
r. the organ of the republican
[illegible] the subject. The republican
[illegible] it just enough of favor to
[illegible] en Mr. Clinton, and too
[illegible] own and separate him as
[illegible] from it. It appointed him
[illegible] missioner to make the neces-
[illegible] and estimates, solicit grants and
[illegible] report at the next session. A
[illegible] e of governor was now to
[illegible] of the esteemed and pop-
[illegible] chief republican character
[illegible] post of vice-president of
[illegible] es at Washington. Spontaneous
[illegible] presented Mr. Clinton before
[illegible] candidate; the party machinery
[illegible] work in the hands of his adver-
[illegible] elected in the summer of
[illegible] of governor, practically by
[illegible] voice of the people. It seemed
[illegible] f all partisan organization
[illegible] y broken up, and as if party
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[illegible] was filled up, like former
[illegible] l embittered political con-
[illegible] He triumphed in 1819, being re-
[illegible] by a very small majority, over
[illegible] ns, who, while yet vice-presi-
[illegible] opposing candidate, and brought
[illegible] ess a popularity never before over-
[illegible] his [illegible] aries availed themselves
[illegible] against the constitution to
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[illegible] re was eminently popular. Mr.
[illegible] d so long as to become identified
[illegible] on to it. The convention made
[illegible] diminished the power of the
[illegible] judiciary, and conceded an en-
[illegible] the right of suffrage, with other
[illegible] while it adopted his canal policy.
[illegible] declined to be a candidate
[illegible] ances for a reëlection as
[illegible] Joseph C. Yates was called to the office with a unanimity equal to that which had attended Mr. Clinton's elevation to the same place. Faction, however, disorganized the triumphant party in 1824. At the same time the legislature in its interest abused its triumph over Mr. Clinton by removing him without notice and without cause from the now obscure office of canal commissioner, in which he was serving as he had served from the first only as an adviser and without any compensation. Indignation awakened by this injustice, and combined with popular discontents resulting from other causes, bore him at the end of the same year back into the office of governor by a very decided vote; but the new combination which had secured this result was committed to the support of John Quincy Adams in the federal government, while Mr. Clinton's sympathies or his views of duty or of interest determined his inclination toward, first, William H. Crawford, and then Andrew Jackson, as candidates for the presidency. He was thus once more in his old position, sustained by a party from whom he withheld his confidence and sympathy, and opposed by the one to which he looked for ultimate support. He was barely reëlected in 1826, while the legislature was opposed to him. His administration of the state government, however, which continued throughout a period of 12 years, with the exception of an intervening period of 2 years, was one of unequalled dignity and energy. He had the good fortune to mature the system of finance which enabled the state, unconscious of expense or care, to begin and carry out his policy of internal improvement, and to break with his own hand the ground in the beginning of the enterprise, on July 4, 1817; and overcoming constant, unremitting, and factious resistance, he had the felicity of being borne, in Oct. 1825, in a barge on the artificial river which he seemed to all to have constructed from Lake Erie to the bay of New York, while bells were rung and cannons saluted him at every stage of that imposing progress. No sooner had that great work been undertaken in 1817 than the population of the state began to swell with augmentation from other states and from abroad; prosperity became universal; old towns and cities expanded, new ones rose and multiplied; agriculture, manufactures, and commerce were quickened in their movements, and wealth flowed in upon the state from all directions. He inaugurated the construction of branches of the Erie canal, by which it was ultimately connected with the internal lakes, with Lake Ontario, and with the Susquehanna, the Alleghany, and the St. Lawrence rivers; and by his counsel and advice, now sought in all directions, he hastened the opening of those canals in New Jersey, Pennsylvania, Ohio, Indiana, and Illinois, which, in connection with those of New York and with natural channels, now constitute a system adequate to the internal commerce of an empire. De Witt Clinton, witnessing the enjoyment of the continually enlarging realization by the public of the benefits of his labors, died at

Albany, the seat of his authority and the chief theatre of his active life, on the 11th day of Feb. 1828. It scarcely needs to be added that party spirit was hushed into profound silence; that a grateful people celebrated his departure from the earth with all the pomp of national sorrow; and that posterity, already advancing on the stage, cherishes his memory with the homage deserved by a benefactor of mankind.

CLINTON, George, an American general and statesman, youngest son of Col. Charles Clinton, born in Ulster co., N. Y., July 26, 1739, died at Washington, April 20, 1812. He received a careful education, directed chiefly by his father and by a Scottish clergyman who was a graduate of the university of Aberdeen, and he early signalized his enterprising character by sailing as a privateer in the French war. He soon after joined a militia company as lieutenant, and took part in the expedition against Fort Frontenac, now Kingston, C. W. Choosing the legal profession, he practised with distinction in his native county, till in 1768 he was elected to the colonial assembly, where he soon became the head of a whig minority. He was elected to the continental congress in 1775, voted for the declaration of independence, was appointed brigadier-general of the United States in 1777, and in the same year, at the first election under the constitution of New York, was chosen both governor and lieutenant-governor of that state. He accepted the governorship, and by 6 successive elections, he held that office for 18 years. Both in his civil and military capacity, he exhibited great energy and rendered important services throughout the war; and though his efforts to save Forts Montgomery and Clinton in the Hudson highlands in 1777 were unsuccessful, it was yet due in a large measure to his counsels that communication was prevented between the British in Canada and the city of New York. The politics of New York were in a distracted state by reason of the numerous tories residing within its limits, which made the chief magistracy unsurpassed in difficulty by any office in the country except that of commander-in-chief of the army. In 1788 he presided over the convention at Poughkeepsie to consider the federal constitution, the adoption of which he opposed, not deeming it sufficiently decided in favor of the sovereignty of each state. When in 1792 Washington was elected to the presidency for the second time, Clinton received 50 electoral votes for the vice-presidency. After an interval in his official life, he was again elected in 1801 governor of New York, and in 1804 was elevated to the vice-presidency of the United States, receiving the same number of votes as Jefferson received for the presidency. He was one of the prominent candidates for nomination to the presidency in 1808, and received 6 electoral votes for that office in opposition to Madison, but he was continued in the chair of the vice-president by 113 electoral votes. He was acting in discharge of the duties of this office at the time of his death. It was by his casting vote in the senate, Jan. 24. 1811, that the recharter of the national bank was refused; he thinking it inexpedient rather than unconstitutional.

CLINTON, Sir Henry, an English general, distinguished in the war of the American revolution, died in 1795. He was the grandson of Francis, 6th earl of Lincoln, served in the Hanoverian war, and was sent to America as major-general in 1775. He took part in the battle of Bunker hill, and in the battle on Long island which resulted in the evacuation of New York by the Americans; was made knight of the bath in 1777, proceeded up the Hudson that year in a vain effort to relieve Burgoyne, and was promoted to the chief command of the British army in America in 1778. After being forced by Washington to evacuate Philadelphia, he commanded an expedition to South Carolina in 1780, and blockaded and captured Charleston. He sailed from New York with 7,000 men to relieve Cornwallis on the very day that the latter capitulated. He was superseded by Gen. Carleton in 1781, returned to England the next year, and died soon after he had been appointed governor of Gibraltar. He wrote a narrative of his conduct in America (1782), and a rejoinder to Lord Cornwallis's observations on it (1783); also observations on Stedman's "History of the American War" (1784).

CLINTON, Henry Fynes, an [illegible] sical scholar, born at Gamston, [illegible] hamshire, Jan. 14, 1781, died at [illegible] Hertfordshire, Oct. 24, 1852. A[illegible] at Westminster school, he entered [illegible] ty of Oxford in 1799, where he re[illegible] gree of bachelor of arts in 1803, [illegible] degree 2 years later. He was r[illegible] of parliament for Aldborough in [illegible] tinued a representative of that bor[illegible] He was a diligent student of th[illegible] Latin literatures, of which he is [illegible] read 40,000 pages betw[illegible] 1810 [illegible] his 2 principal works, the [illegible] *Fasti Romani*, are thoro[illegible] treatises on the civil and li[illegible] Greece and Rome, interspersed w[illegible] dissertations (Oxford, 5 vols. [illegible] these 2 works the author p[illegible] ments, published at Oxford [illegible]

CLINTON, James, an American [illegible] 4th son of Charles Clinton, born in [illegible] N. Y., Aug. 9, 1736, died at Li[illegible] Orange co., Dec. 22, 1812. [illegible] excellent education, he joined [illegible] in the French war as a cap[illegible] Bradstreet, and distinguished h[illegible] in the capture of Fort Fron[illegible] sloop of war on Lake [illegible] commanded 4 regiments [illegible] of the western frontiers of Ulster [illegible] against the incursions of the I[illegible] appointed colonel at the [illegible] lutionary war, and acc[illegible] to Canada in 1775. Pr[illegible] brigadier-general, he was [illegible]

in command at Fort Clinton, on
of the Hudson, when in 1777
was stormed by Sir Henry Clinton,
purpose of creating a diversion in favor
yne; and after a gallant resistance, he
severely wounded with a part of the
across the river. In 1779 he coöpera-
Gen. Sullivan in his expedition against
ola. Crossing the Mohawk to Lake Ot-
of the sources of the Susquehanna,
h he was to join Sullivan, he dam-
and then by breaking the dam
an artificial current which car-
rapidly to the point of junction.
of Indians and tories was soon after
d . defeated at Newtown, now
erward commanded at Albany,
ent at the siege of Yorktown and
of Cornwallis, and at the evacuation
by the British. He retired to his
close of the war, but was called
ous civil duties, as commissioner
undary between New York and
, as delegate to the convention for
fe al constitution, and to that of
ng it, and as member of the as-
ate of his state.

daughter of Zeus and Mnemosyne,
of glory and history. She is rep-
a laurel crown on her head, a
right hand, and a roll of papyrus

a small fortified town in the circle
in the Austrian dependency of Dal-
importance of its position, on a
ng the route from Spalato to
country, has always rendered
the first points attacked by invading
It has witnessed many sieges and pass-
he hands of many masters. The Roman
Andretium is supposed to have been
unt Clissa, in the vicinity.

ES, an Athenian demagogue and
grandson of a tyrant of Sicyon of
, and the son of Megacles, and at
of the Pisistratidæ (510 B. C.)
of the lcmæonidæ, their chief ene-
with the assistance of the Del-
nd the Spartans, Hippias was ban-
thens, Clisthenes, in order to secure
ency over his rival Isagoras, chose
e of the cause of the people, and suc-
with the favor of the Pythia, in intro-
ome important changes in the ancient
ion of Athens; among others, the divi-
Attica into 10 instead of 4 tribes, each
of several *demi*, under demarchs; the
the number of the senators from 400
f e tribe; and, as some say, the
, so remarkable in the history
. Clisthenes, being suspected of
of tyrannical power, was himself ban-
afterward returned and triumphed
emies.

HEROE, a parliamentary and municipal
and market town in the co. of Lancaster, England, on the E. bank of the Ribble, at the base of Pendle hill, which towers 1,800 feet above the level of the sea, on the Lancashire and Yorkshire railroad, 216 m. from London; pop. in 1851, 11,480. The town is well built, and contains a free grammar school, a mechanics' institute, several churches, extensive print works, cotton manufactories, and lime kilns, and the remains of a castle which was erected by the De Lacy family in the 12th century. It returns one member to the imperial parliament.

CLITOMACHUS, or, in the language of his native country, HASDRUBAL, a Carthaginian who went to Athens in the 40th year of his age, and, after studying under Carneades, became the head of the new academy on the death of his master, 129 B. C. Of his voluminous works only a few titles are preserved.

CLITOR, or CLITORIUM, an ancient town of Arcadia, situated on a hill and near a river of the same name. In its vicinity was a fountain, the waters of which were supposed to have the power of rendering wine distasteful to those who drank of them.

CLITUMNUS, a beautiful little river of upper Italy, rising near Spoleto, and emptying into the Tinia, a tributary of the Tiber, famous in the classics for its sacred character, the reputation which it bore for the rural beauty of its banks and environs, the excellence of its pastures, and a peculiar breed of snow-white cattle which were in great demand for sacrificial purposes, especially on days of triumph, when, with gilded horns and wreaths of flowers about their necks, the sacred steers of the Clitumnus formed no inconsiderable part of the pomp. Virgil, in his second Georgic, when lauding Italy as superior to all the world in her fitness to all agricultural purposes, apostrophizes the Clitumnus as the nurse of snow-white herds, from the meadowy banks of whose sacred stream the bulls, mightiest of victims, have oft preceded the Roman triumphs to the temples of the gods. Propertius speaks of the river god as hiding his lovely streams, baths of the snow-white herds, in the shadow of his sacred groves; and Pliny has left, in his 8th epistle, a beautiful description of the clear river, its gentle green pastures, its white herds, its groves and its little temple, sacred to Jupiter Clitumnus, the remains of which are yet to be seen on the road between Spoleto and Foligno.

CLITUS, surnamed the BLACK, a Greek general of Macedon, a foster-brother and familiar friend of Alexander the Great, whose life he saved at the battle of the Granicus, 334 B. C. Six years afterward, however, he was slain by Alexander at a banquet, when both parties were excited by wine, and Clitus had provoked the conqueror's resentment by speaking of the glory of Philip as greater than that of Alexander. The king repented bitterly of his rash deed, and caused a splendid funeral service to be held in honor of his victim, 326 B. C.

CLIVE, ROBERT, lord, baron of Plassey, a British general and conqueror in India, born Sept. 29, 1725, at Styche, in Shropshire, died by his own hand in London, Nov. 22, 1774. He early displayed an aversion to studious pursuits, and a fiery, bold, and unmanageable temper. Great apprehensions were entertained by his parents for his future welfare, and probably the difficulty of training him prevailed with his father to solicit for him an appointment as writer in the service of the East India company; and in that capacity, at the age of 18, he sailed for Madras, where he did not arrive till more than a year after he left England. The only gentleman to whom he had a letter of introduction had left the country before Clive's arrival, and, too shy and haughty to seek other acquaintance, he entirely shunned society, and soon found himself in a miserable situation, ill paid, badly lodged, and with debts pressing. He manifested the same impatience of control as he had at school, and was several times near being dismissed through his insubordinate spirit. At times he was greatly depressed in mind, and twice attempted suicide. On the second of these occasions, when the pistol snapped, he was roused by the circumstance of his escape, and burst into an exclamation that surely he was reserved for something great. Not long after his arrival, France and England being then involved in the war of the Austrian succession, Labourdonnaie, governor of the Mauritius, landed in India with an army, appeared before Madras, and compelled the town and fort to surrender. The English inhabitants were to be kept as prisoners of war on parole, and the town to remain in the hands of the French, until a small sum demanded for its ransom should be paid. Dupleix, the governor of Pondicherry, an ambitious man, revolving gigantic plans for French domination in the East, did not approve of the liberal terms of Labourdonnaie, and insisted that Madras should be razed to the ground. Clive and other Englishmen, indignant at this violation of the articles of capitulation, felt that they were not bound by their parole, and resolved on escaping. Clive at night fled from the city in the disguise of a Mohammedan, and arrived safely at Fort St. David, about 21 m. S. of Madras. He now, at the age of 21, obtained an ensign's commission in the military service of the company, and at once distinguished himself in several operations against the French, and won the regard of Major Lawrence, then the ablest British officer in Hindostan. Peace was soon concluded between the crowns of England and France, but peace did not ensue between the French and English companies trading in the East, and this decided Clive's lot in life. Taking advantage of the confusion into which the empire of the Moguls had fallen, and the ceaseless feuds of the rival princes, Dupleix was the first to perceive that a colossal European power might be consolidated on the ruins of the Mohammedan dynasty. His ambitious views were singularly favored by the death of the great Nizam-ul-mulk, the viceroy of the Deccan, in 1748, on whose demise there was a disputed succession. Nazir Jung was his son and heir, whose right was contested by a nephew, Mirzapha Jung. The Carnatic was one of the provinces subject to Nazir Jung, and was governed by a nabob whom the English called Anaverdy K[illegible] His title, too, was disputed by C[illegible]nda Sa[illegible] son-in-law of a former nabob [illegible] Mirzapha Jung and Chunda Sahib [illegible]vaded the Carnatic, and applied to the [illegible] for assistance. Dupleix at once saw t[illegible] rendering the aid sought, he should acqu[illegible]solute control over these weak [illegible]es, and [illegible] their names rule the whole of [illegible] He allied himself with th[illegible] French soldiers and 2,000 sepoys, [illegible] battle in which Anaverdy Khan was de[illegible] and killed, while his son Mohammed Al[illegible]ter known as the nabob of Arcot from speech upon his debts, fled with a few follow[illegible] to Trichinopoly, leaving the pretenders in [illegible] entire possession of the Carnatic. Dupleix [illegible] found himself at the summit of power. [illegible] Jung was put to death by his own adh[illegible] Mirzapha was lord of the Deccan, and [illegible]stalled with the greatest pomp as [illegible] Pondicherry. He survived his elevation [illegible] few months, but a new puppet was set [illegible] Dupleix, in the receipt of in[illegible] with large forces at his beck, and [illegible] every appendage of oriental mag[illegible]ence, [illegible]cised undisputed sway over 30,0[illegible]00 [illegible] He displayed the most arrogant [illegible]te, [illegible] medals in his own honor, and ere[illegible] a [illegible] recording the downfall of Nazir Jung [illegible] own triumphs, in 4 languages on the [illegible] of the shaft. Meanwhile the E[illegible]h b[illegible] greatly alarmed for their establ[illegible] for their existence in India. T[illegible]ognized Mohammed Ali as nabob of the [illegible]natic, but his dominions now consisted of Trichinopoly, and even this place [illegible]sieged by Chunda Sahib and the F[illegible]aries. To relieve the place [illegible] to strike a blow somewhere [illegible] the capital of the Carnatic, was [illegible] a point of attack; and in the absence [illegible] Lawrence, who had gone to E[illegible]nd, [illegible] were turned in the hour of da[illegible] to [illegible] Clive. He was now 25 years o[illegible] and acquired a name for desperate c[illegible] and military genius. He assured the [illegible] that unless some decisive move w[illegible] made on Arcot, Trichinopoly w[illegible] house of Anaverdy Khan perish, and the F[illegible] becoming entire masters of India, w[illegible]pate the English. His advice prevailed; [illegible] placed at the head of 200 British troops [illegible] 300 sepoys, armed and disciplined in Eu[illegible] style. He marched on Arcot and took [illegible]out a blow, the garrison being panic-[illegible] knowing that he would not be long [illegible] remain unmolested, he made vigor[illegible]tions for defence. As soon as the news [illegible] Chunda Sahib, he despatched 4,000 [illegible] Trichinopoly, who were joined on [illegible] more than double that fo[illegible] Arcot [illegible]vested with about 10,000 [illegible]

h Sahib, Chunda's son. For more
did Clive sustain the siege in the
rerwhelming force; his little band
ime, although suffering with hun-
ing the most touching devotion to
ommander. An attempt to relieve
overnment of Madras had failed,
f 6,000 Mahrattas under Morari
d been hired to assist the cause of
li. were on the march to succor
fore they could arrive, Chunda
d to storm the fort. He first
e to surrender, and to his threats
with scorn. Chunda Sahib chose
the assault the anniversary of the
ein, the son of Ali, when devout
are stirred to the wildest fanat-
e an implicit faith that who-
in battle against the infidel
the eternal joys of Paradise.
ed secret notice of the proposed
made arrangements to meet it.
on driving elephants before
foreheads were armed with iron
down the gates. As soon as
et balls they turned furiously
ing into the midst of those
n, spread death and dismay
Clive everywhere animated
g himself to the greatest dan-
three desperate assaults and an
t, the assailants retired behind the
der cover of night retreated, leav-
and a quantity of ammunition.
them fell, while the besieged
men. This gallant defence and
eceived at Madras with exultation.
lish soldiers and 700 sepoys
, and he at once began offen-
He took the fort of Timery,
of Morari Row's forces, attacked
at the head of 5,000 men, of whom
nch, defeated him, seized his mil-
and defeated him in a 2d battle;
the field to Fort St. David, and
ed to the ground the monument
ix had erected to his own vain-
as the city which had in honor of
rung up around the column. The
triumphed everywhere, in spite of
the French to prevent them, and
ally won new laurels, although in
e troops under his command were
; order. The important forts of
l Chingleput, garrisoned by French
into his hands; and after these
returned to Madras and married
yne, sister of the celebrated as-
yal. His health was much bro-
sailed for England with his bride
after their union. On his arrival
he was received with the highest
The East India company presented
rich diamond-hilted sword, which
accept until one of equal value
Major Lawrence, whose merits he
declared not inferior to his own. He remained about two years in England, spending his money profusely, aiding his poor relatives, and contesting a seat in parliament, to which he was elected, but was at once deprived of it by the vote of a small majority in the house. In 1755 he embarked for India with the rank of lieutenant-colonel. He was at once employed, in connection with Admirals Watson and Pocock, in reducing the stronghold of Gheriah, the haunt of a pirate named Angria, the terror of the Arabian sea. The place was captured, and booty to the amount of £150,000 divided among the conquerors. He then proceeded to his government of Fort St. David, and had been there but about 2 months when events happened that called forth all the resources of his powerful mind. The immense province of Bengal, together with Bahar and Orissa, had on the death of a viceroy of the Mogul descended to his son Surajah Dowlah, a cruel despot and a fierce enemy of the English. A rich native whom he longed to plunder had taken refuge at Calcutta, and had not been given up. On such a mere pretext he marched a large army against Fort William, took it (June 20, 1756), and in the principal hall of the British factory seated himself and ordered his prisoners to be brought before him. He abused them, but promising to spare their lives, retired to rest. The captives, 146 in number, were then forced into the garrison prison, known as the "black hole," a dungeon only 18 feet square, and all except 23 of them perished. (See BLACK HOLE.) While Surajah Dowlah wrote a pompous letter to the Great Mogul at Delhi describing his conquest, the news of the fall of Calcutta reached Madras, and roused the English population there to frenzy. To inflict vengeance for the massacre, an expedition was at once determined on, and placed under the joint command of Clive and Admiral Watson. Nine hundred English infantry and 1,500 sepoys sailed from Madras in October, but owing to head winds did not reach Bengal until December. The nabob was at Moorshedabad when he heard of the arrival of the English on the Hoogly, and he instantly assembled his army and marched toward Calcutta. Clive took Budgebudge, Fort William, and Calcutta, and stormed and sacked Hoogly (Jan. 1757), when the nabob thought it best to come to terms, which Clive was unwilling to allow, but was overruled by a committee of the company's servants. The negotiations between Surajah Dowlah and the English were conducted chiefly through two agents, Mr. Watts and Omichund, a Bengalee. This man was servile, treacherous, and avaricious. From the nabob's cruelties and insignificance, a plot was formed against him, and Clive lent all his influence to the conspirators in aid of their plan of deposing him and placing Meer Jaffier, the principal commander of the nabob's troops, on the throne of Bengal. In return for this aid, Meer Jaffier was to make the most ample rewards to the English. Omichund, who had the entire confidence of Surajah Dowlah, by sys-

tematic deceit lulled all his suspicions. Clive knew Omichund to be a villain, and was resolved to outdo him in deceit if necessary. Meanwhile he was writing the nabob the most friendly letters, and at the same time plotting with his commander, Meer Jaffier, who was to desert his master at a critical moment with large bodies of troops. Just as the plot was ripe, Omichund played false to the English, and demanded as the price of good faith the immense sum of £300,000, or he would divulge the whole scheme to Surajah Dowlah. Clive, in order to punish Omichund for his treachery, resolved himself to act the part of a traitor. He promised what was asked. The wily Bengalee insisted that his claims should be mentioned in the treaty between Meer Jaffier and the English. Clive had two treaties drawn up, the real one on white paper, and a spurious one on red. The white contained no mention of him. To the red one, which Omichund insisted should bear Admiral Watson's signature, that officer refused to affix his name, and Clive was actually accused of having forged it, although he afterward denied the charge. All was now ready. Mr. Watts fled secretly from Moorshedabad, and Clive put his troops in motion, and the battle which followed proved of immense importance for the power of Britain in India. Clive's army consisted of 3,000 men, only 900 of whom were Europeans. He met the Indian forces within a mile of Plassey, June 23. The latter consisted of 40,000 infantry, armed with firelocks, pikes, bows and arrows, and swords, with 50 pieces of huge cannon drawn into the field by elephants and oxen, supported by 15,000 cavalry from the northern provinces, far superior to those of the Carnatic. The nabob's ordnance opened fire with little execution, while the well trained English artillery was served with deadly effect. Several of Surajah's officers fell, and, growing more terrified at every instant, he listened to the advice of subordinates to retreat, and ordered his army to fall back. Clive ordered his to advance, which it did with impetuous fury, when the vast host of the nabob fled in total rout. Only 500 of them were slain, but their camp, ordnance, baggage, countless wagons, and oxen, fell into the hands of the English, who in this memorable battle, with but 22 soldiers killed, and 50 wounded, put to flight nearly 60,000 men. Meer Jaffier had given no aid during the action, but drawing off his forces when it was decided, was honorably received by Clive, and shortly installed upon the musnud at Moorshedabad, as nabob of Bengal, Bahar, and Orissa; while Surajah Dowlah fled, to be captured a few days afterward, and executed by the orders of his late commander. Meer Jaffier was now called upon to reward his allies, and Omichund among the number came, supposing himself to stand high in favor. "It is now time to undeceive Omichund," said Clive to one of the company's servants. "Omichund," said this gentleman in Hindostanee, "the red treaty was a take-in. You are to have nothing." The wretched dupe fell back insensible; he sank into idiocy, and died a few months afterward. —Immense wealth now fell upon the company, and for his part Clive was conducted by Meer Jaffier into the great treasury of Bengal, at Moorshedabad, where were piled up heaps of gold, silver, and jewels, with full leave to help himself. He took between £200,000 and £[illegible],000. Later in life, when his conduct was impeached in the house of commons, he vigorously defended himself before the committee, and, alluding to the wealth showered upon him, described the glittering heaps on which he had gazed, and exclaimed: "By God, Mr. Chairman, at this moment I stand astonished at my own moderation." His great victory over Surajah Dowlah was soon followed by the defeat of the army of the Great Mogul, sent against Meer Jaffier, which he overcame at Patna, and by his victory (1759) over the troops sent by the governor of Batavia under pretence of assisting the Dutch colonies, but really to disturb the British in their possessions. New honors and wealth were showered upon him, and Meer Jaffier granted him an annual revenue of £28,000. In 1760 he returned to England, where he was raised to the Irish peerage with the title of Baron Clive of Plassey. He was elected to parliament as one of the members for Shrewsbury. Clive remained in England about 4 years, directing the powers of his mind chiefly to Indian affairs, while his immense fortune enabled him to live in magnificence. During his absence from Bengal the affairs of the company fell into utter confusion; it was not enriched, while crowds of adventurers returned from India with splendid fortunes, acquired in a short time from systematic oppression and plunder of the hapless natives. At length these evils reached such a pitch that the speedy ruin of the Anglo-Indian empire was prophesied unless some strong hand should interpose, and Clive was looked to as the only man who could save it from destruction. After much solicitation he consented to go back to India; was appointed governor and commander-in-chief of the British possessions in Bengal; and in May, 17[illegible], for the third time reached Hindostan. At Calcutta he found every thing fearfully disorganized, far more than he had anticipated. But with his stern judgment and indomitable will, he proceeded at once to the reformation of all abuses in spite of great opposition. On one occasion 200 officers of the army, who had been engaged in commercial speculations, combined and resigned their commissions, thinking to terrify him into submission by the spectacle of an army without leaders. Lord Clive instantly issued commissions for new officers, even to mercantile agents who were disposed to aid him; the sepoys he had himself trained in battle stood firm in their devotion to him, and he ordered that every officer who resigned should at once be brought to Calcutta. The insurrection was quelled, the ringleaders punished, and the others pardoned. He returned from India,

1767. In 1772 his proceedings in In-
made the subject of public discussion,
773 a select committee of the house of
s was appointed for purposes of inves-
Clive successfully vindicated his con-
The charge of fraud brought against him
inded by a vote of the house, and a mo-
d to by a large majority, "that Lord
ered great and meritorious ser-
country." But for some time the
great commander had been giving
relieve his sufferings he resorted to
gradually ruined his strong intel-
ored all his life under periodic
y, and in one of these he died
and. (See "Life of Robert Lord
ior-Gen. Sir John Malcolm, 3 vols.
Macaulay's "Essays," art. Lord

LOÆ (Lat. *cloaca*, a conduit, pipe), the
of ancient Rome. The trunk drain,
he *aca maxima*, is formed by 3 tiers
arches overlying each other in
whole work is 15 feet wide by 30
The masonry is of hewn stone,
cement. Along this subterranean
inage of the city, as well as the
of the aqueduct, discharged
the river. The cleansing and
e cloacæ were confided at first
s, afterward to the ædiles, and
to commissioners entitled cura-
cloacæ, who employed convicts in
levied the expense by assessment.
Elder originated these works 150
the foundation of the city, for the
raining the marshy ground between
and Capitoline hills. Agrippa
the *cloaca maxima* in a boat.
is victims to be thrown into the
The cloacæ yet serve in part for the
f Rome, and several modern cities are
same principle.

AC , the goddess of purification, one
names of Venus. Pliny derives
ation from the obsolete verb *cloare*,
to wash, and adds that when the Sa-
a prevented the Romans from taking
on their ravishers, both armies puri-
elves by rites before the statue of
whence arose the name of the Venus
Livy attributes the appellation to the
that one Titus Tatius found a sta-
in a *cloaca*, which statue he set
ecrated under the name of Venus
ers.

S AND WATCHES, machines of mod-
on for measuring time. The an-
ed its progress by the movement of
bodies, and measured it by the
by the sun passing over the divi-
sun dials. In the absence of the
ruments were replaced by the con-
a clepsydra, a vessel containing
which slowly escaped through a small
equal quantities in equal times. A floating body in the vessel which received this, pointed by its height the lapse of time. The Chaldeans made use of this device to measure the movements of the signs of the zodiac, allowing the water to run during the whole revolution of a star, and dividing the fluid into 12 equal parts. The Romans, after the 3d consulship of Pompey, introduced this instrument from Greece, and employed it to limit the length of public speeches; whence the remark of Cicero: *Latrare ad clepsydram.* The water clock is an invention of the 17th century. It is a cylinder with small cells, hung by a thread fixed to its axis in a frame, on which the hour distances, found by trial, are marked. As the water flows from one cell into another, the centre of gravity of the cylinder changes, causing it to move. Capt. Kater modified it, using mercury instead of water, and by the weight of the fluid which ran in any small interval of time he measured this with great accuracy. The sand or hour-glass was an ancient invention, being in use in the East before the Christian era. It resembles the clepsydra, fine sand being substituted for water. This cheap and convenient instrument is still employed for some purposes requiring the frequent measurement of the same short interval of time, as a half minute in running out the log, or 2½ or 3 minutes for boiling eggs. The peculiar feature of clocks and watches is a contrivance for regulating a force constantly exerted, as that of a descending weight or a spiral spring tending to uncoil itself, so that it shall be expended little by little, and produce in bodies it impels equal motions in equal times. It is unknown when this device, called an escapement, was invented. In the time of Archimedes wheel work moved by springs and weights was known; and by the early astronomers as ingenious mechanism was displayed in the planetariums which imitated the motions of the heavenly bodies, as that afterward employed in the train work of a clock to designate the divisions of time. The regular motions observed in nature became so associated with time, that when the first machines were made for measuring and recording this, it was natural to introduce in them the changes of the moon, the ebb and flow of the tides, and various astronomical revolutions. Thus, these instruments, though rude and imperfect as timekeepers, were some of them curiously complicated. Clocks appear to have been first used in Europe in the monasteries about the 11th century, and their invention is supposed to be due to the Saracens. In 1232 the sultan of Egypt sent to the emperor Frederic II. a *horologium*, provided with weights and wheels, pointing out the hour, and also the movements of the heavenly bodies, with infallible certainty, as described by Trithemius. Calmet quotes, from a book describing the customs of the Cistercian monks in 1120, passages alluding to the striking of the clock, and the regulating this to wake the monks at the proper time. Dante, who died in 1321, refers (Parad. cant. xxiv. ver. 13) to the striking of a

clock; and other authors of this period make reference to them and to their weights and machinery. When they were first introduced into England is uncertain. There is said to be a clock at Dover castle bearing the date 1348; and in Peterborough cathedral the striking part of another is in use, of similar construction, referring it to the same period. In 1288, the clock house near Westminster hall was furnished with a clock to be heard by the courts of law, the cost of which was paid out of a fine imposed on the chief justice, Hengham. In the early part of the 14th century Wallingford, abbot of St. Alban's, produced a wonderful clock, which indicated the motions of the heavenly bodies; this is often referred to as the oldest clock known. In the second half of the 14th century, Charles V. of France employed a German, named De Wyck, to put up a great clock for the palace. It was a large striking clock, going one day, and provided with one hand only. Edward III. of England employed Dutchmen from Delft to construct a clock in 1368. It would seem, therefore, that before these dates clocks were made in Germany and Holland. In the description of De Wyck's clock is the first notice of a kind of escapement for regulating the action of the moving force. A toothed wheel was turned by a weight suspended by a string wound round its axle, and this revolving communicated motion to other wheels. A horizontal axle upon one of these carried upon one end a wheel with teeth projected outward parallel with the axle. This from its form was called the crown wheel. Nearly touching the teeth was set a vertical spindle, with 2 pallets or levers so arranged upon it, that the teeth on the upper edge of the crown wheel would strike in its revolution one of these, and the teeth of the other edge the other pallet, causing the spindle to turn first one way and then the other. A beam fixed upon the top of the spindle, and loaded with weights near each end, caused the vibrations to be made with an approximation to regularity. An index upon an intermediate wheel pointed the progress of the movement or the lapse of time. Astronomers found the machine useful in their observations; and the next great invention connected with it is due to them. Galileo first called attention to the isochronism of the vibrations of a body swinging at the same distance from its point of suspension, whether in a large or small arc, and, some say, applied the oscillations as measurers of time in his astronomical observations. This discovery was first announced in 1639. The ancient astronomers of the East are stated to have employed the pendulum in the same manner as Galileo, counting its vibrations, and keeping up its motion by an occasional push with the finger. Its first application to clocks is claimed for several different inventors in the early part of the 17th century, and it is not improbable that it may have occurred to several to substitute it for the horizontal swinging beam, turning the spindle supporting this into a horizonal position. Huyghens was the first (about 1657) to explain its true properties; and this has given him with many the full credit of an original inventor. He showed that the vibrations of the same pendulum in large and small arcs were not isochronous, but might be made so by causing the pendulum to swing in a cycloidal instead of a circular arc; and he contrived what were called cycloidal cheeks to give this motion, which, though a beautiful application of science, proved defective when the subject was better understood. For the retarding influence of the imperfect curve was really very small in small arcs, and this was in part counteracted by the impulse received from the escapement at e [illegible] which caused a quicker oscill [illegible] the same arc of a pendulum [illegible] Moreover, the friction caused by [illegible] a new retarding influence. For these and [illegible] reasons they were at last given up, [illegible] thin spring forming the upper part of [illegible] dulum rod was finally found to give by [illegible] ing all the approximation to the cycloidal [illegible] that is required. The astronomical clock [illegible] came to be regarded as one adapted for [illegible] measurement of time in making obs [illegible] not, as before, one showing the peri [illegible] lution of the heavenly bodies. Still its [illegible] tion demanded great improv [illegible]. The [illegible] weight, and length of the pen [illegible] length of its vibrations, were not [illegible] proportioned. Dr. Hooke first reduced [illegible] of vibration, which followed the applica [illegible] his anchor escapement. This, so named from its resemblance to the part of an anchor called the arms, is attached to the horizontal spindle with which the pendulum also is connected so as to vibrate with it. The points hang down, spanning about one-third the circumference of the scape wheel, and correspond to the pallets on De Wyck's spindle. As the scape wheel revolves, a tooth comes in contact with the pallet of one arm, giving this an impulse upward; this brings the other arm down between two teeth on its side, and checks the scape wheel going further, until the swing of the pendulum in the other direction carries the pallet out. Each vibration thus allows one tooth of the scape wheel to pass. The recoil introduces irregularities, to overcome which the forms were given to the teeth of the wheel, and to the pallets, which distinguish what is known as the "dead-beat" or "repose" escapement, invented by George Graham, in the early part of the 18th century. Many other escapements have been invented, some of great ingenuity, particularly those of Messrs. Bloxam, Macdowall, and the modification of the latter by Denison. The last is applied to the great clock for the new houses of parliament in London, and has recently been modified by substituting for its former escapement wheel of three teeth, one of one tooth only, thus reducing its friction proportionally. It is thought this escapement will take the place of the dead-beat for general use.—The pendulum also was greatly perfected. In order

in its c re of oscillation always at
from the point of suspen-
, about the year 1715, substi-
ube of mercury for the pendu-
the rod lengthened by increase
the mercury by the same cause
; and by cold these motions
The arrangement was called the
pensation. With this and the
escapement the best clocks have con-
be furnished. He also suggested the
t of metals which expanded at differ-
y heat for the pendulum rod; and
John Harrison made what was called
on pendulum, composed of 5 rods of
4 of brass, parallel, and alternating
other, and so fixed, that as the one
eir expansion pushed the pendulum
from the point of suspension, the other
it back just as much. Harrison intro-
principle into watches also, and ob-
parliamentary reward of £20,000.
of his improvements was the "going
chet," by which the movement is
he weight is raised by winding;
a contrivance for the same pur-
called the "going fusee."—As
nts were made in the escape-
the other parts of the clock
er proportioned and fitted, and
ed by nicer workmanship. To
hand of De Wyck's clock was
other pointer for the minutes. The
arries this passes through the hol-
al axis upon which the hour hand
, each having its own independent
ith little friction one upon the other.
of the minute hand, under the dial of
ies just beyond the end of the
pinion having it may be 8 teeth,
s with a wheel on another axis
th. This axis, revolving then 8
wer, carries a pinion of 8 teeth which
with a wheel upon the hollow axis
teeth, and thus the motion is again
times, making in all 12 times. The
by which the clock was made to
was in use before De Wyck's
and the alarum are appendages
to a timekeeper, and with many
and less useful devices must be
n this brief account.—By short-
um its vibrations succeed each
rapidly, and by lengthening it the
are fewer in the same time. Upon
clocks are regulated, the pendulum
d in length by moving the ball upon
own. In their greatest perfection, a
deviation in the daily rate of an astro-
ck is allowed of about $\frac{1}{10}$ of a second.
clock's error one day is +10s. and
r is +11s., the probable deviation
on the intermediate day would be
ud. Very good clocks in common
ary $\frac{1}{2}$ a second daily.—Spiral springs
applied as a motive power about the middle of the 16th century. The heavy machine could now be so reduced in size as to be placed anywhere and in any position, exposed with impunity to the motion of ships, and in the form of watches even carried in the pocket. The spring as first used, it is believed, was not however a coiled ribbon, which by untwisting carried round the barrel that contained it, but a straight stiff spring held fast at one end, and connected at the other with a barrel by means of a string which was wound round the latter, making it revolve. This must have required frequent resetting.—While the English have directed their attention mainly to raising the art to a higher standard, and producing the most perfect specimens of workmanship embodying the latest improvements, the Americans have sought to produce good serviceable clocks at the least possible cost. Each nation has attained success in its own way. The cheap American clocks, made without any pretence of finish, for which the English clocks are remarkable, were several years ago admitted by the English themselves to run a week with smaller weights and a shorter fall than the English clocks, an advantage due to the superior lightness of the work, and the adoption for all the pinions of the oldest form of this wheel, which is called from its shape the "lantern pinion." These work with the least friction, and require the least accuracy in the wheels; but single ones are costly to make, and so they fell out of use in England, where clocks are not made in manufactories, but by hand. These pinions are barrel-shaped, formed of 2 disks or heads secured together by a circle of pins near the edge, and these serve for teeth, the axis passing through the centre of the heads. The parts are rapidly made and cut out by machinery, and so the brass wheels are stamped from plates, all the similar parts being made alike for thousands of clocks. This is the peculiar feature in the production of American clocks. The adoption of spiral springs reduces them to their most portable form. The common English house clock, continuing to be made after the old way and constantly encountering rivals of less cost, is now actually worse constructed than it was 50 years since. The French make their movements by machinery, and produce very cheap and serviceable work; and their clocks are more elaborately ornamented than the American. They also, until within a few years, excelled in the manufacture of the largest kind of clocks, called the turret, which now are brought to the highest perfection in England, and also in New York.—About the year 1840, Prof. Wheatstone exhibited to the royal society an electro-magnetic clock, the hands of which were set in motion by a connection through conducting wires with a wheel carried by a well regulated clock; which wheel was so arranged that the current excited by a small constant battery placed anywhere on the circuit should be alternately broken and restored in equal times. Thus by means of one primary clock any number of dials placed in connection

with it could all be made to indicate the same time, and the care which so many separate clocks require would be very much reduced. Various methods of effecting the connection have been contrived: the earth itself has been employed to produce the electric current, and the application of this has been made directly to the pendulum, the bob of which in this case is a coil of insulated wire, attracted while the current is passing through it by a permanent magnet on one side. An apparatus in the pendulum causes the current to be alternately broken and renewed with each beat. In 1848 Mr. Sears C. Walker, of the U. S. coast survey, instituted experiments in connection with Prof. Mitchel and Dr. Locke, of Cincinnati, with the view of applying this principle to determine differences of longitude between places connected by telegraph wire. On Nov. 17, with a delicate clock especially contrived and made by Dr. Locke, and upon wires put up for the purpose at the expense of the coast survey, between Cincinnati and Pittsburg (400 m.), the first satisfactory experiment was made. The clock, placed in the electric circuit, recorded its beats at all the offices along the line upon a graduated fillet of paper, on the plan of the Morse recording apparatus. (See report in Ex. Doc. No. 21, House of Rep., 30th congress, 2d session; also, "American Journal of Science," 2d series, vol. vii., March, 1849.) Electricity is also employed directly as the primary motive power of clocks, as was shown upon a large scale by Mr. Shepherd of London in the exhibition of 1851. Other inventors also exhibited machines similar to his.

—WATCHES. As clocks are now made with spiral springs and a balance wheel, the distinction between them and watches is not very precise. The latter are always of a size for the pocket, and may be carried in any position. Little is known of the early manufacture of watches, though it would seem this must date after the introduction of the spiral spring in the 16th century. And yet there is authority for the opinion that they were made of some form at Nuremberg as early as the year 1477. Beckmann speaks of a watch in Sir Ashton Lever's museum bearing the date 1541; and it is known that Henry VIII., who died in 1547, and his contemporary Charles V., also possessed watches. In Shakespeare's time they were used by private individuals. Malvolio, in "Twelfth Night," says: "I frown the while, and perchance wind up my watch, or play with some rich jewel." They must have been common in France before 1544, for they were named with clocks in a statute enacted that year in Paris. A description and engraving of one bequeathed by Queen Mary to Mary Seton, which is in possession of Sir Thomas Dick Lauder, Bart., may be found in Smith's "Historical and Literary Curiosities" (Lond. 1845, 4to., plate 96). Some of these early watches, it is stated, were as small as those of the present day, and were often of an oval form. Others were as large as dessert plates. All of them, however, were extremely
rude measurers of time. The barrel
the main spring coiled within it
by a piece of catgut wound arou
spiral grooved fusee of the form of a
this was turned by the key in winding t
it coiled around itself the catgut, unw
from the barrel and causing this as it
coil up the spring. The last coils we
the small end of the cone, thus present
running of the watch the least le
greatest force of the spring. As
wound up the cord, and the force of t
became weaker, the increased size of
presented greater leverage, and the
force of the spring was compensated.
watches a chain was substituted for t
and with this watches and chronom
still made in England. The fusee con
the first or great wheel of the watch (
tres of motion coinciding) by a
click which admits of the fusee
backward in winding; and by mean
spring sometimes set in the great
watch is kept in motion during the win
is the going fusee before referred to.
most modern watches, necessarily in
ones, and in all the American and Swis
the fusee and chain are dispensed
immense advantage is thus gained on
of simplicity and reduction of fric
is strange the English are so slow in
the old method. The chain with its
links and pivots, together with the
about 600 small pieces to the constru
making and keeping which in repair
crease the expense of watches. The
number of pieces in an English watch
200. The old watches were provided
vibrating balance in the form of a b
(the same as now used), but the
spring, which is essential to equalize it
was not contrived and attached to it
Hooke made this application some ti
discovery of the pendulum, or ab
1658. This little spring gives to
sated balance wheel the perfection of
pendulum. One end of it is att
axis of this wheel, round which
loosely coiled, the other end being
frame. As the balance is made to
the scape wheel, as in a clock es
delicate hair spring controls the mo
lating it by its elasticity as it open
so that if the connection with the
were suddenly removed, the vibr
still continue for a time, as the pen
ilar case would continue to swing.
alteration in the length of this spri
length of the vibrations, and by th
watch is regulated; precisely as the
pendulum are lengthened or shorten
same purpose. The best of these
great exhibition in 1851 were
Lutz of Geneva, which bore the t
out nearly straight and laying on a
without injury. Mr. I

or them, possessing elasticity
ee, and subject to little varia-
ifficulty, however, of obtain-
formly accurate, from preju-
other cause, they have failed
into use. Mr. Dent also tried glass for
wheel, its slight tendency to alter in
change of temperature recommending
purpose. It was found to involve
, though less than those to which
ances, are liable. Both the balance
ng are affected by this cause. In
and in some watches it is coun-
y the compensation curb of Harrison,
as a regulator, directly influencing
ng; or by the compensated balance
, the ring of this being so contrived
traction and expansion to alter its
l thus adjust itself to the altered
to move it. Both plans, like the
pendulum, depend upon the unequal
f brass and steel by increase of heat.
ts of watches are not so essentially
those of clocks; but they exhibit
variety of forms, only a few of which
ed in this article. The escapements
us; those only which are actually
present time will be noticed. 1.
—generally employed in all the best
ent chronometers—was a French
oved by Thomas Mudge, a Lon-
er, near the close of the last cen-
uished by the scape wheel
ance through a lever. The
mble in their arrangement the anchor
of clocks. 2. The horizontal or
ent, invented by George Gra-
ing in principle the dead-beat
nt in clocks; it is adopted by watch-
different countries. The impulse is giv-
hollow cut in the cylindrical axis of the
by teeth of a peculiar form projecting
ntal crown wheel. 3. The duplex,
Dr. Hooke, perfected by Tryer, and
probably from a double set of teeth on
wheel; one set is of short pins stand-
rim of the wheel, and these give the
the other set are the usual teeth for
. This very perfect escapement
great accuracy, but is extremely
and easily deranged; it is not now so
sed as formerly. 5. The detached or
ter escapement, peculiar in the balance
or detached from the scape wheel in
ns, cept at the instant of receiving
ach tooth in turn impinges upon
affixed to the verge or arbor of the
As this impulse is given, a little cam
arbor runs under the extreme end
steel spring attached to a piece
detent, and lifts this together with
attached to it that checks the scape
the balance with its pallet and cams
d, and as it vibrates back the cam
little spring forward to admit its
and the pallet receiving another impulse the movement is repeated. The pallet of the arbor, that of the detent, and the point of the cam also, are jewels. This escapement requires no oil. The invention was originally French, but was perfected in England in the latter part of the last century by Earnshaw and the elder Arnold, who died in 1799. It is an escapement adapted only for watches which are to be used with particular care.—Watches have been made of late years so that they could be wound and the hands set without a key. This is done by mechanism reached through the handle. Though introduced in excellent watches, the plan is objectionable, as it unnecessarily adds to the complexity of the machine. Napoleon I. carried a watch that wound itself by means of a weighted lever, which was set in motion by the movement of the body in walking.—Until quite recently but few watches have been manufactured in the United States, confined chiefly to the period of the last war with Great Britain and to the manufacture of a small number about 20 years ago. Beyond this the watch trade here has been limited to the importation of European movements which have been cased and perfected for use. There are now 2 establishments, the principal one at Waltham and the other at Roxbury, Mass., engaged in constructing and arranging all the parts upon the principle so successfully applied to the making of clocks. The utmost simplicity is introduced in the number and arrangement of the pieces, the whole being produced by a connected and uniform system of machinery unlike any thing in use elsewhere. Their number is reduced from 800 or more, employed in English fusee watches, to about 120. Every piece may be fitted indiscriminately with any of the others, the jewelled holes and pivots only excepted. These are recorded at the factory with the number of each watch, so that they can always be duplicated with certainty of perfect fit by sending the number and name of the piece to the factory; the gauge by which they are classified is graduated to $\frac{1}{1000}$ of an inch. The establishment of Messrs. Appleton, Tracy, and co., at Waltham, produced 6,000 watches in 1857, and the number in 1858 was expected to reach 10,000. This establishment also manufactures fine enamelled dials.—The importations of watches and parts of watches into the United States amounted in the year ending June 30, 1857, to $3,823,039; of which $2,463,593 was from England, $1,155,654 from France, and the remainder from other countries. The value of clocks imported (chiefly from France) was $79,147.

CLODIUS PULCHER, Publius, a profligate Roman, died 52 B. C., was the son of Appius Claudius, but changed his name to Clodius in order to curry favor with the plebeians. He served in Asia under Lucullus, in whose camp at Nisibis he acted the part of a mutineer, and was afterward taken captive by the pirates of Cilicia. Dismissed, he joined the Syrians in their war against the Arabians. He led a scandalous life of debauchery on his return to

Rome, and is believed to have had an intrigue with the wife of Julius Cæsar, into whose house, while it was occupied by the vestals and matrons in the performance of the mysteries of the Bona Dea, during the celebration of which all males were rigorously excluded, he gained admission in the disguise of a woman. Cæsar, although he divorced the woman, on the ground that his wife must not even be suspected, thought proper to give evidence in favor of Clodius on his trial for the violation of the sacred mysteries. Cicero was invited to defend him, but refused to do so, and gave evidence against him. By bribing the judge, however, Clodius was acquitted. Supported by Cæsar, Pompey, and Crassus, he was elected tribune, 58 B. C., and used his power to wreak vengeance upon Cicero, who had vehemently attacked him in the senate, by driving the illustrious orator into exile. Next year, however, Cicero was recalled to Rome, in spite of the opposition of Clodius. He also managed to make Cato leave Rome, by sending him on a mission to Cyprus. Having degraded himself as a tool of the triumvirs, he aimed at the supreme power, rallied around him the worst characters of Rome, insulted Pompey, and after having taken every means to bring disgrace upon himself and upon Rome, he was finally murdered in an affray with his political rival Milo—a circumstance which has acquired great celebrity from the masterly oration written by Cicero in defence of Milo. The mob was infuriated at the death of their worthless favorite, and Pompey was appointed sole consul, to restore order. His first wife was a sister of Lucullus, and his second wife the notorious Fulvia.

CLOISTER. See Monastery.

CLONMEL (vale of honey), a town and parliamentary borough of Ireland, in the counties of Waterford and Tipperary, on the Suir, 104 m. S. W. of Dublin, and 25 m. N. W. of Waterford, on the Waterford and Limerick railway; pop. in 1851, 12,518. It is finely situated in a picturesque valley, nearly shut in by mountains. Most of the town is built on the N. or Tipperary side of the river, the S. part being little more than a suburb of the larger. The main streets are handsome and well paved. Gas is generally used, and the supply of water is abundant. The best houses are of limestone, which is quarried in the vicinity. A handsome old parish church, with 2 towers and a fine oriel window, a number of chapels, 2 convents, a richly endowed grammar school founded in 1685, several other educational establishments, including a model school under the national board of education, a lunatic asylum, a fever hospital, a court house, county gaol, a house of correction, a handsome news-room, and extensive barracks for artillery, cavalry, and one regiment of infantry, with a small military hospital attached, are the principal buildings. There are various public charities, a mechanics' institute, and a savings bank. There are 2 islands in the stream, called Moore's and Long islands, the latter of which is entirely built over. Each is connected with the opposite banks by 2 bridges, and a 5th bridge, of [illegible] arches, crosses the whole width of the river. The chief trade of Clonmel is in grain, butter, provisions, and cattle. From 200,000 to 300,000 barrels of wheat are annually brought into the town. There are numerous large flour mills, an extensive distillery, 2 breweries, and a cotton factory. The butter trade is transacted chiefly in a commodious market house. Barges navigate the Suir from this place to Waterford, and the Waterford and Limerick railway passes through the town. The system of cheap and rapid travelling by car, which was introduced by Mr. Bianconi in 1815, and in 1853 had extended throughout [illegible] of the counties of Ireland, was originated at Clonmel. This town is said to have been fortified by the Danes. It was taken by Cromwell, May 9, 1650, after a fierce resistance, and its defences were demolished. It is the birthplace of Sterne, and gives the title of earl to the Scott family.

CLONTARF, a village and parish of Ireland, co. of Dublin, on the N. shore of Dublin bay, 3 m. E. N. E. of the city, and a place of great resort for sea bathing; pop. in 1851, 2,[illegible]. Brian Boru was slain near here, April 23, 1014.

CLOOTZ, Jean Baptiste, baron, known under the name of Anacharsis Clootz, an eccentric philanthropist, born at Val-de-Grâce, in the vicinity of Cleves, Prussia, June 24, 1755, guillotined in Paris, March 23, 1794. He was edu[illegible] in Paris, and manifested from an early [illegible] interest in visionary schemes of social [illegible] tion, his wealth permitting him to dev[illegible] self to their realization. Under the name [illegible] Anacharsis, he visited Germany, England and several other countries of Europe, to [illegible] philanthropical doctrines, the [illegible] was to unite all nations in one [illegible]. When the French revolution broke out, he returned to Paris. He had already called himself the spokesman of the human race (*orateur du genre humain*), and he now proceeded to officiate as its ambassador. Gathering around him as many specimens of the different foreign nationalities as he could find in Paris, he marched up with them to the national assembly, and, amid enthusiastic applause, delivered an address demanding for the foreigners in Paris the right of participating in the celebration of the anniversary of the taking of the Bastile. He showed the utmost devotion to the cause of the revolution, and contributed 12,0[illegible] livres for the public defence. After August 1[illegible], 1792, he repaired to the legislative assembly, where he indulged in violent attacks against monarchy and religion, insisted upon a price being placed upon the heads of the duke of Brunswick and the king of Prussia, whom he called the Sardanapalus of the North, and finally offered to raise at his own expense a legion of Prussians. Created a French citizen by a decree of the legislative assembly, he was elected to the convention by the department of Oise,

ame conspicuous by his eccentricity and
ferocity of his hatred against the kings
. In te of all this, he was suspect-
besn who had no confidence in
ng the title of baron and
income of 100,000 livres; he
to be expelled from the society of
implicated him in the accusation of
his companions, and, although no
his guilt could be produced, sentence
was passed upon him. When brought
ce of execution, he asked to be beheaded
"in order," as he said, "to be able to
principles, while he saw the heads
ns fall." Calmly ascending the
scaffold, he protested against his
de a final appeal to the human race,
eived the fatal blow with unfaltering
He has left some strange writings:
tude des preuves du Mahométisme,
r du genre humain, and *La république*
lle.

UET, Jules Germain, a French physi-
in Paris, Dec. 18, 1790, commenced
of medicine at an early age, and
nction in anatomy and surgery while
He is now one of the most emi-
s in the world; has been many
of surgery in the faculty of Paris;
favor or protection, obtained all
orships at different periods of his
public competition, in which his ri-
been some of the most eminent anat-
and surgeons of France. He has made
and surgery his speciality, and stands
valled as a professor and a practical
these branches. He has written
important works on hernia; on cal-
he diseases of the urinary organs; on
ion and construction of skeletons;
nce and disposition of a lachrymal
in serpents; and on the anatomy of
worms. Several of his dissertations
d prizes from the academy of sci-
other learned societies. He has
y new surgical instruments, and
tant methods of performing sur-
ations. He has also introduced im-
n the art of modelling anatomical
in wax; and many of his own ex-
preparations are preserved in the ana-
museum of the medical faculty of Paris.
he obtained, by public competition, the
linical surgery of the faculty of Paris,
continues to hold that appointment.

-HAULED. A vessel is said to be
ed when her sails are so trimmed
y be steered as near as possible in
of the prevailing wind. A fore-
rigged vessel will lie within about 4
of the wind; few square-rigged vessels
r than 5 to 6 points. Thus, sup-
wind to be from due N., a sharp fore-
could head either N. E. or N. W., with
sufficiently full to give her headway,
a full-rigged ship could not be headed higher than N. E. by E. to E. N. E. on one tack, or N. W. by W. to W. N. W. on the other.

CLOSEN, Karl, baron, a Bavarian statesman, born at Deux-Ponts in 1787, died in Munich, Sept. 18, 1856. His father, Hans Christoph Ludwig von Closen, who died in Mannheim in 1830, fought under Washington in the American war of independence as aide-de-camp of Count Rochambeau. Karl, after completing his studies at the university, entered the Bavarian service, and after having accompanied Prince Wrede in the campaign of 1814 he officiated on his return in the department of home affairs, of which he was appointed councillor in 1819. For many years he took an active part in the debates of the Bavarian diet, but came frequently in collision with the government, especially in 1833, when he was accused of circulating a treasonable poem; an accusation which, in 1840, was declared groundless by the chief court of appeal. He travelled in France and England, principally in furtherance of his studies of agricultural economy, in which department he had already distinguished himself in 1810 by his coöperation in the foundation of a Bavarian agricultural society, also by the establishment upon his farm of a beet-root sugar manufactory, by the introduction of an improved breed of sheep, and by the endowment of an agricultural school for orphans. During the revolution of 1848 he endeavored to calm the popular excitement, and for some time he filled near the Frankfort parliament the functions of Bavarian plenipotentiary.

CLOTAIRE. I. King of the Franks, the 3d son of Clovis and Clotilda, born in 497, died in 561. On his father's death, he received as his kingdom a part of Neustria, the capital of which was the city of Soissons, while his brothers, Chlodomir and Childebert, were kings at Orleans and Paris; the eastern part of the Frankish empire, Austrasia, was in the hands of the eldest son of Clovis, Theodoric. When his brother Chlodomir was killed in 531 during the war against the Burgundians, Clotaire murdered 2 of his nephews to get possession of the kingdom of Orleans. His son Chramne having revolted against him, he ordered him to be burned alive with his wife and children. After the death of his brother Childebert, and of Theodoric's grandson, Clotaire found himself in possession of the whole Frankish empire, which then included all of Gaul and part of Germany. He reigned after this but 3 years; and on his death the empire was divided between his 4 sons, Charibert, Gontran, Chilperic, and Siegbert. II. A Merovingian king of the Franks, born in 584, died in Paris in 628. He was the son of Chilperic, king of Neustria, and the notorious Fredegonda. He was only 4 months old when his father died, and his guardianship was assumed by his mother. A protracted and ferocious war broke out between Fredegonda and her rival, the beautiful Brunehaut, who governed Austrasia and Burgundy in the name of her own grandsons. After many vicissitudes, his mother's rival was delivered into his hands by the nobles of Burgundy in 614, and was put to death in the most barbarous manner, her grandsons being already dead. Thus Clotaire II., being the only surviving Merovingian prince, was proclaimed king of the whole empire founded by Clovis, and increased by the conquests of his sons.—Two other princes of the same name bore the title of kings: Clotaire III., in the 7th century, under the guardianship of Ebroin, as mayor of the palace; Clotaire IV., some 50 years later, under Charles Martel. Both were among the most obscure of the *rois fainéants.*

CLOT-BEY, a French physician, founder of the medical institution of Egypt, born near Marseilles in April, 1799, practised as surgeon there until 1823, when he was appointed chief surgeon in the Egyptian army, in which capacity he rendered valuable services, beside establishing the school of Abouzabel, which furnishes Egypt with competent physicians and surgeons. Mehemet Ali gave him the title of bey without requiring him to change his religion. He is the author of several works, of which *Aperçu général de l'Égypte* (2 vols., 1840) deserves particular mention.

CLOTHO, the youngest of the 3 Parcæ or Fates, was daughter of Jupiter and Themis, or Erebus and Night. Clotho held the distaff and spun the thread of life, whence her name Κλωθω, "I spin." She was represented as wearing a crown with 7 stars, and a many-colored robe.

CLOTILDA, SAINT, the wife of the Frankish king Clovis, born about 475, died June 3, 545. She was the daughter of Chilperic, king of the Burgundians, who was murdered by his own brother Gundebald. Although all her family were Arians, she was educated in the Catholic faith, and became a great favorite among the bishops of Gaul. Through their agency she was married to Clovis (493), to whose conversion she greatly contributed. When the power of her husband was firmly established in the country N. of the Loire, she incited him to attack the Burgundian king in order to avenge her father's death. Clovis yielded to her entreaties; but from some unexplained motive did not follow up eagerly the victory he had won near Langres, and was satisfied with making Gundebald his tributary. After the death of Clovis (511), however, the queen prevailed upon her 3 sons, Chlodomir, Childebert, and Clotaire, to renew the war against Sigismund, the son of the murderer. This unfortunate prince was taken prisoner, dragged to Orleans, and with his wife and children thrown into a well. The war in the mean time continued, and after a protracted struggle Clotilda had the satisfaction of seeing Burgundy in the hands of her 2 sons, Childebert and Clotaire. She spent the latter part of her life in Tours, near the tomb of St. Martin, became noted for her piety, founded several monasteries, and was canonized by the church of Rome.—Clotilda must not be confounded with her daughter of the same name, who died in France in 531. She was the wife of Amalaric, king of the Visigoths, who used violence to bring her over to the Arian faith, but by the aid of her brother Childebert she was delivered from her husband's tyranny.

CLOTILDE DE SURVILLE, MARGUERITE ELÉONORE, born about 1405 at the castle of Vallon, on the Ardèche, died toward the end of the 15th century. A descendant of the noble family of Vallon Châlis, she married in 1421 Bérenger de Surville, who was killed in an attempt to relieve the city of Orleans, then besieged by the English. A collection of remarkable poems, published by Charles de Vanderbourg in 1803, was first ascribed to Clotilde; but after protracted controversies, the poems turned out modern productions, supposed to have been written by Vanderbourg himself.

CLOUDS, bodies of vapor in the atmosphere. From the surface of the earth and of the waters aqueous vapor is continually ascending into the atmosphere, where it remains in an invisible state so long as the air is not saturated with moisture. Its capacity to retain this vapor is limited, but varies with its temperature; the greater the warmth, the more the particles of vapor are expanded and carried into higher regions. Cold condenses the particles, their specific gravity is increased, and they appear in visible form. (See DEW.) Saturated to the utmost, the atmosphere cannot contain, it is estimated, more than 6 to 7 inches of water, diffused through it in an invisible state, at one time. But the diffusion of vapor is never uniform, and the temperature, too, varying in different portions of the atmosphere, there ensues the greatest diversity in the conditions of the moisture contained in these portions. Where it is not too abundant for the existing temperature, it is all dissolved, and the appearance is presented of the clear, blue, invisible ether. Where the moisture is in excess for the temperature, it is seen in the form of clouds, thin and fleecy if the air is but slightly sursaturated, but dark and lowering if new accessions of moisture or reduction of temperature increase the difference between the moisture present and the capacity of the air to retain it. Thus the conditions are seen that cause frequent changes in the appearance of the clouds; and it is understood how clouds filled with moisture, like those gathered by the Etesian winds as they sweep over the Mediterranean, are dispersed in thin air as they strike the hot rays reflected from the burning sands of Sahara; and how those similarly charged with moisture by the sweeping of the trade winds across the Atlantic shed this in copious showers as they strike the cold summits of the Cordilleras. The formation of a cloud by cold and its dispersion by heat are beautifully exhibited at the Table mountain, Cape of Good Hope. As the wind from the southern ocean strikes the rocky slopes of the mountain and is diverted upward into the colder regions of the atmosphere, a dense white cloud is evolved, which, reaching but little above the mountain, spreads over its summit and is carried

other side. It marks the course of
"plunging down with the violence of
as described by Sir John F. W.
close to the mural preci-
d of ba round to Cape
it fills with and uproar."
ches the w ons below, the
ble state, and
y coveri he mountain
own its precipit es, suggest-
of a huge white , whence its
table cloth."—Litt known of the
which the cloud v end, or of
that sustain them in the atmosphere.
teorologists they are supposed to
nute bubbles or vesicles filled with
yed upward by ascending currents
ar. (See Fog.) So long as the vesi-
their form, the vapor is sustained;
they collapse and collect in drops,
t whether vesicular or solid,
doubt floated up along with
gravity of which is reduced
heat near the surface. Inter-
rays of the sun, or meeting currents
dry air, they absorb more heat,
lifted to higher elevations. Ac-
climate and the season, clouds
formed at great heights. Dalton
at in small fleecy patches they have
at full 5 miles above the surface, sail-
the highest summits of the Andes.
ons the vapors are soon checked
by condensation. Wherever
weather be calm, they settle
greater relative gravity, un-
change of position changes of
appearance, until they may be at last
the warmer airs below, and in these
and disappearing, be again lifted into
strata to reassume the form of
clouds are thus no permanent col-
the same particles of aqueous va-
paces in the firmament in which suc-
rtions of vapor in the atmosphere are
presented in visible form, to disap-
e replaced by other portions.—The
rms in which clouds present them-
described after the nomenclature in-
by . Luke Howard in the "Aske-
1802 (published in vols. xvi.
the "Philosophical Magazine").
nizes 3 primary modifications, the
stratus, and cirrus; and intermediate
these, into which they blend, 3 other
e cumulo-stratus, cirro-stratus, and
ulus; and lastly, the nimbus, result-
the others confusedly intermixed.—
lus is the summer day cloud. About
is seen to collect by the gathering of
oks of cloud, which are the scattered
and which accumulating present
nce of distant rounded hills covered
w. In calm weather it is obviously
om the columns of vapor that rise ir-
from the surface, invisible below. but brought into view above, as the particles reach the stratum of the atmosphere already at its dew point. There the vapors, arrested in their ascent, form piles of clouds of hemispherical shapes, the apparently flat bases of which mark the level where hygrometric saturation commences. As with the increasing warmth of the day more vapor is carried upward, these piles of clouds increase in height and density. They obscure the rays of the sun, by which, however, they may be dispersed before the decline of day, or they may be gathered and condensed by cool winds, preparatory to returning their moisture to the earth in the form of rain.—The stratus is the cloud of night and of winter, though not limited to these periods any more than the cumulus is to that of the day. As the day cloud is produced by the ascending vapors, that of the night, called also the fall cloud, is, excepting fogs formed by exhalation, the result of their descent—their settling down in horizontal layers or strata. This form of cloud is at times suddenly produced, overspreading the heavens in a few minutes, by the temperature of the air falling by radiation or by diminished atmospheric pressure. It falls to a lower level than other clouds, creeping along the valleys at night in the form of mists and fog, and vanishing with the return of day. In winter it continues as an overhanging cloud sometimes for several successive days. The smoke fogs are one form of the stratus; at night settling down to a lower level, as if each smoky particle by radiation of heat collected dew, and sunk by increase of weight.—The cirrus is a cloud of feathery form, and in wisps of diverging fibres. It extends in long slender filaments, and again in parallel stripes from one extremity of the heavens to the other. Its appearance often in flexuous fibres has caused the names of curl cloud and mare's tail to be applied to it. No clouds are seen so elevated as the cirri. From summits where one looks down upon the piles of cumuli, the fleecy cirri are seen floating as far off apparently in the blue ether, as when observed from the base of the mountains. Their great elevation and feathery form suggest that the vapor exists in snowy flakes, and this is rendered more probable by the occurrence of those phenomena due to reflection and refraction, as halos, parhelia, &c., most usually in these clouds and the cirro-cumulus. Traces of halos, such as are produced by the refraction of light from frozen particles, may almost always be discovered in them by careful examination with the aid of a blackened mirror. The long filamentous forms of cirrus are evidently connected with the action of currents in the air, maintaining uniform temperature along their lines, and drawing out in these shapes the residues of dissolving clouds. Variations in these currents of temperature or direction impress new forms upon the cirri. In diverging fibres, which is the true cirrus form, the cloud is supposed to indicate changeable weather, in summer rain and wind, in winter frost or snow; if the

fibres have for some time continued to point in one direction, a gale of wind is looked for from that quarter.—The cirro-cumulus is often produced by the cirrus descending to a lower level in the atmosphere, and its parallel bands breaking up into the shape of small cumuli. It also appears independently of the previous existence of cirri. It floats at a high elevation, being often seen in the light of the moon through the scud and drift of the lower clouds, tranquilly reposing, as described by Bloomfield:

> The beauteous semblance of a flock at rest.

Its appearance in summer is accompanied by heat, an increase of which it is supposed by some to indicate; as in winter a termination of frost, and succeeding mild wet weather. When its round masses are clustered thick together, and appear dense and heavy, many prognosticate thunder and tempestuous weather. Its spotted appearance has caused it to be commonly known as the "mackerel sky."—The cirro-stratus is characterized by its arrangement in long parallel lines of cloud in close proximity, straight or waving, and lying in horizontal strata. It is also seen in a long and narrow horizontal sheet, tapering toward its extremities. The name of wane cloud has been given to it, from the fibres of the cirrus waning or subsiding to produce it. Its prevalence indicates wind, rain, or snow. In the form of rows of little clouds curved in a peculiar manner, it is called the cymoid cirro-stratus, and is regarded as a sure indication of approaching storms. When seen as a thin hazy veil spreading over the sky, particularly toward night, and obscuring the sun and moon, it is one of the most certain signs of approaching rain or snow. Virgil, in the Georgics, notices this rising of the sun, and its obscuration soon succeeding behind a cloud, as sure to be followed by rain. The refractions of the light of the sun and moon, producing halos and mock suns, often appear in this cloud.—The cumulo-stratus is formed by the passing of the cumulus into the nimbus, or rain cloud, though before the latter is perfected, the cloud may be dispersed by evaporation or turn back to the cumulus. It is also called the twain cloud, from the fact that two or more cumuli are often seen to join together to produce it. A single one is also sometimes observed to spread out laterally at top, till it overhangs the base in irregularly shaped protuberances. Such masses gather together, presenting a most imposing spectacle, as a thunder storm is approaching. The marginal protuberances are then seen, often shining with a strong silvery or golden light, contrasting finely with the darkness and density of the central portions of the cloud. Upon these the cirrus or cirro-stratus is sometimes formed by currents of air, causing the upper portion of the cloud to assume the curly forms of this variety, or spreading its long line horizontally across the summit.—The nimbus is that stage of cloud from which the rain falls. It usually proceeds from the cumulo-stratus, which grows darker and denser, till its blackness and threatening aspect can no longer be mistaken as a sure sign of impending rain. The blackness gives place to a gray obscurity, an evidence of a change in the disposition of the aqueous particles, and the rain falls from the cloud, which is now a nimbus. The presence of its aqueous drops gives it the distinction among clouds of being the field upon which are displayed the beautiful colors of the rainbow. The nimbus having discharged its moisture, and the rain being returned to the earth whence it came, the various forms of cloud are again seen in their several places in the sky: the cirrus in some of its modifications in the upper regions, while the fragments of the nimbus are converted into thin cumuli, which are borne along by the light winds near the surface. But if these gather again into the form of cumulo-strati, rain is likely to return.—The nomenclature of Howard is generally adopted by meteorologists. Prof. Loomis objects to the introduction of the nimbus as a distinct form, considering that it does not differ from some of the other varieties, except in the fall of rain, which is not sufficient to give it a peculiar character; for clouds do not always undergo a decided change as rain begins to fall. He remarks upon the occurrence, familiar to all who have lived in the vicinity of the great lakes, of a sheet of cloud continuing during a large part of the winter season to overcast the sky, from which snow is frequently emitted for days in succession, without change or apparent motion in the cloud itself. This variety, including all clouds which cover the heavens with a nearly uniform and unbroken sheet, he places in the division stratus, thus supplying a deficiency in the European classification, at least in its adaptation to American meteorology. ("Journal of Science," vol. xli., p. 325.) While with this exception the classification of the clouds by Mr. Howard is generally approved, the explanations commonly given of the mode of their formation are called in question in two interesting papers on the forms of clouds, by W. S. Jevons, published in the "London, Edinburgh, and Dublin Philosophical Magazine," of the years 1857-'58. The writer had devised an ingenious method of reproducing some of their peculiar forms in cloudy precipitates generated in two strata of liquids of different temperatures and specific gravities, while these were in the act of intermingling. A very weak solution of the nitrate of silver, at the ordinary temperature of the air, was, with especial precautions to avoid disturbing the contents of the glass vessel, gradually introduced through a tube beneath a quantity of water containing a few drops of hydrochloric acid, or a little salt, and mixed with a solution of white sugar at a temperature somewhat exceeding 100° F. Under proper conditions the cloudy precipitate of chloride of silver was found to assume the cirrus form, extending through the intermingling strata in small threads and curiously shaped bands, and curving about

ost complicated and beautiful manner.
ous character remains distinct as the
a dense mass throughout the
ll parallel threads are seen
upward nearly to the surface of the
and ending in evanescent points.
cirrus cloud is supposed to be
two strata of air, both com-
nearly saturated with aqueous
the lower possessing the highest
and least specific gravity, are
contact. The two penetrate each
minute streamlets, and the watery
precipitated in the forms of these
which are cirri. The reader is re-
cor len ons in the 2d article
r for of clouds (April No.,
), from which the author
following conclusions: "1. In the
ed mode of production of the cu-
an ascending current of warm moist
been to overlook some cause
to check the upward motion,
precipitation has commenced; of
weight of the precipitated watery
at least partially the cause.
subsidence or separation of the
particles takes place, the ascend-
air will not be so much checked,
its tendency to redescend as in
will spread out in stratiform pro-
produce the cumulo-stratose form.
nce and aggregation of the cloud
rain continue and increase, the air
cloud will be gradually relieved
nt of the water, yet, retaining the
evolved in its condensation, will de-
pecific gravity. It will, therefore, com-
with the upmost parts, tend to ascend
the superincumbent strata, producing
e crest, which is characteristic of the
4. The electricity of a thunder cloud
ously derived from the weak charge
ng in the ascending current
the moisture. The precipitated
icles collect this electricity, which,
radually aggregate into drops of rain,
ensified to an indefinite extent."—An
ture in the phenomena of clouds
ing in the equatorial regions in a
which encircles the globe, and con-
nent and of nearly uniform breadth.
covers the region of equatorial calms,
doldrums," and vibrates with this, as
ns change, from one side of the equator
r, its range being from lat. 5° S. to
. It has been observed of various
anging from 60 to several hundred
he late Commodore Arthur Sinclair, of
frigate Congress, entered under this
g in lat. 4° N. in January, 1818, and
he crossed the equator. An extract
journal is quoted by Lieutenant Maury
hysical Geography of the Sea," p. 172,
esents an interesting picture of the
y disagreeable and debilitating influences that affect all voyagers in these latitudes. The cloud belt is produced by the vapors gathered up and brought in by the N. E. and S. E. trade winds from each side of the equator, and diverted in the belt of calms, where they meet, into the upper regions of the atmosphere. There, continually fed by new supplies from below of heated air saturated with moisture, the cloud spreads in one vast body over several degrees of latitude, passing even beyond the margin of the calms, seeing that its rains stretch out on each side into the region of the trade winds. Borne upward into the cooler strata of the atmosphere, the heated airs shed their moisture, which falls in frequent torrents of rain. But immense volumes of vapor upon the upper surface of the cloud, exposed in the heat of the day to the direct rays of the sun, are retained in an invisible state, and thus are wafted away to reappear as clouds, and precipitate their waters upon distant portions of the earth. This cloud belt serves another important purpose in protecting the torrid region it overshadows from the scorching heat of the sun; which, if continued without interruption, would in one season render the equatorial belt a barren, uninhabitable waste. It is the N. and S. vibration of the cloud ring that causes the fluctuation of the rainy seasons on the parallels of latitude within its range. When it has swung near to its extreme polar limit, the sky about the equator is clear, and the crust of the earth then begins to grow hot. "The dry season continues, the sun is vertical, and finally the earth becomes parched and dry; the heat accumulates faster than the air can carry it away; the plants begin to wither and the animals to perish. Then comes the mitigating cloud ring. The burning rays of the sun are intercepted by it. The place for the absorption and reflection, and the delivery to the atmosphere of the solar heat, is changed; it is transferred from the upper surface of the earth to the upper surface of the clouds." Clouds are thus not merely the gatherers and distributers of rain to all parts of the earth, but they are a curtain spread before the sun to intercept its fierce heat, and check at night the too rapid evaporation from the soil heated during the day by its rays. Where they are not formed, and the surface is exposed to the sun, there we infer that water cannot be present, and the ground must be a parched desert. Such appears to be the condition of the side of the moon presented to the earth, no clouds ever being seen to obscure its disk.—Little is known of the causes that produce the brilliant and varied colors often assumed by the sky, particularly at sunset. They are unquestionably, however, connected with the aqueous vapor contained in the atmosphere; and the reddish hue, the most common of all, is probably owing to the greater facility with which these rays are transmitted through the watery vesicles. Reflected from the surface of distant hills, they even give to these a delicate roseate hue.—The electricity of the clouds is a subject for more especial reference in the articles ELECTRICITY

and LIGHTNING. Aqueous vapor being a better conductor of electricity than the dry air, the heavy clouds gather this force from the atmosphere around, some strata being positively and some negatively electrified. When separated by comparatively dry atmosphere, these clouds, or the clouds and the earth, are in the condition of a Leyden jar, ready to be discharged with sudden report when the non-conductor which separates them is broken through. As the clouds thicken, the watery particles press more closely together, the electricity contained in the whole cloud gathers upon its surface, and as the vapors condense into rain it is more copiously evolved, acquiring the tension to break through the non-conducting medium, and then the electrical equilibrium is established with the flash of lightning and the roar of thunder. The electrical condition of the clouds has been referred to as the cause of their being often gathered around the summits and sides of mountains, as if they were attracted to these, as light floating substances when electrified rush toward bodies in their vicinity. But though this may sometimes be the case, the phenomena explained in the early part of this article show that the low temperature prevailing in these localities is sufficient to account for the continual formation of a cloud, causing it to appear permanent, when it is but a process of condensation of new vapors brought on by the winds replacing those which are swept away and rendered invisible, as they dissolve in the warmer airs at a distance from the mountain.

CLOVER (*trifolium*), a genus of plants belonging to the natural order *leguminosæ*, comprising 59 species, and generically distinguished as tufted or diffuse herbs, with flowers in heads or spikes, leaves mostly palmately 3-foliate, a persistent 5-cleft calyx, the standard of the corolla longer than the wings, small 1–6 seeded pods, and stipules joined with the petioles. From the 3 leaflets which constitute its leaf it takes the name τριφυλλον in Greek, *trifolium* in Latin, and trefoil in English.—There are several of the many varieties of clover of great value to agriculturists. Red clover (*T. pratense*) is a biennial plant, having perennial qualities under special modes of cultivation, and is particularly adapted to argillaceous soils. Small clover, or the rowen crop, is excellent for young stock; but animals should not be permitted to feed on clover lands in early spring, or late in the autumn; in the latter case the crop is likely to be winter-killed for want of a mulch-like protection, and in the former is not able to regain full vigor during the after part of the season, and this is especially true if sheep are the pasturing stock. Land may be seeded down to clover with any of the cereal crops, such as wheat, barley, rye, oats, and in special cases with buckwheat. It is very desirable that the seed should be sown sufficiently early to receive the full benefit of the spring rains. The dung of cattle fed on clover hay is often sufficient to seed land, if distributed evenly through the soil, the seed generally passing through the animal organism without having its germinating qualities impaired. The proportion of seed to be sown with timothy or other grass seeds must necessarily vary with the results desired. In order to secure even distribution, it should be sown in calm weather. Standing on one ridge while sowing on another, as is sometimes done, on a windy day, is unfavorable to the best performance of the work, even by the most skilful sower. If the soil be ploughed in seven-pace lands or ridges, casting the seed with both hands, after the Scotch system, will enable the operator to do his work better and go over twice as much ground in a given space of time. In dry weather, and on very clayey soil, it is well to bush-harrow, to insure full covering, and occasional rolling is very desirable. Every farmer should have plenty of clover for soiling in early spring for his working animals. After each cutting during the season, top-dress heavily with manures. Land becomes "clover sick" only in the absence of a proper succession of crops, and the elements of fertility necessary for the support of the plant. Many farmers have great faith in the power of clover, when ploughed in, to restore fertility to exhausted soils. It does so only by taking carbon from the atmosphere, and causing elements in the soil to assume organic forms, thus rendering them more available as food for other crops, and is, therefore, very necessary in a rational system of husbandry; but if a soil be almost robbed of its fertility by excessive cropping, its equilibrium must be restored by adding deficient elements. Land is often too poor for the seed "to take." In this case it should be summer-fallowed, manured, sowed to winter grain, and to clover in the spring. Professor Way found in 100 parts of the ash of clover, grown on a silicious sand, phosphoric acid 5.82, lime 35.02, potash 18.44, soda 2.79, sulphuric acid 3.91. As indicated by analytic research, plaster of Paris, which is sulphate of lime, the phosphates, wood ashes, and muck treated with the salt and lime mixture, are excellent top-dressings for clover. The use of plaster, sometimes called gypsum, is often of great value for top-dressing, even in the immediate vicinity of plaster beds. We have seen many instances of this fact along the Grand river in Upper Canada, where the gypsum taken from the beds was ground and applied to the soil above them with the greatest advantage. The practice of ploughing in a clover crop preparatory to the growing of wheat is of much importance. There is a great similarity between the composition of the ashes of wheat and clover, especially if the latter be grown on soil replete with the necessary constituents. Analytical research has shown that the composition of clover or any other plant varies with the chemical condition of a soil; this truth has been often enough demonstrated. Clover crops should therefore be grown on soils containing

cient pabulum, and in an available condi-
for their support. The growing of clover
l to deep ploughing, because its long roots
deeply in search of food for the stems
leaves, which if ploughed into the land will
ergo decomposition, and leave near the sur-
elements taken from the subsoil. Its leaves
carbonic acid largely from the atmosphere,
the ploughing in of the crop augments the
on of a soil very materially, which changes
olor, and gives it greater capacity to absorb
heat and to retain manures and ammonia,
er resulting from their decomposition,
bed from the atmosphere. It is very
whether in all cases clover is the most
ical mode of furnishing carbon. If time
much, it is not, because an imme-
pplication in most cases may be made
treated with the salt and lime mix-
k mould from the woods, peat, river
&c.—Clover fields are sometimes in-
by vegetable parasites of well developed
e, producing seed. The small broom
che minor) is one of these. Its flowers
a pale brownish color. Microscopic ex-
s show that when it infests clover
an organic connection between the
This parasite is interesting to the agri-
t, not for its utility, but for its mischief.
odder (*cuscuta*) is another of these depre-
belonging to the family of the *convolvu-*
aving small flowers resembling those of
volvulus. It bears perfect seed, which
l upon the soil, and there germinates,
the ground by a wire-like process,
o a lingering death unless it finds a
In the commencement of its growth
nourishment from the soil, but after-
rom the juices of the plant which it in-
The dodder will find the object of its
ion if within reach, and its papillæ or
e processes, although delicate in struc-
will sink into the stalk and feed upon the
f the clover plant.—The crimson clover
natum) is now grown for soiling and
beautiful Italian plant, sometimes
as a border flower. Much attention
o its cultivation at present in Scot-
ulton's experiments in growing crim-
clover attracted special attention from
mbers of the Highland agricultural so-
A large crop was grown from seed sown
Fulton on land from which a crop of early
had just been taken. Three months
sown, on Oct. 17, the yield was
per imperial acre. He arrived at
wing conclusions: It is highly valu-
a secondary crop after early pota-
s an excellent intermediate crop to pre-
rnips; it will withstand severe weather
established before frost; it produces
llent crop of forage, much relished by
live stock of the farm. If the land is
ery clean, it will not answer so well as
, but it is of easy cultivation. Coming
o the scythe as a summer crop, 10 or 12 weeks after sowing, it may be produced very early in the season if wanted for stock.—White clover (*T. repens*) is an excellent plant on all pasture lands, of great value in sheep husbandry, adapted to almost every kind of soil—loamy, rocky, sandy, or clayey—and its network of roots is all through the soil.—The following analyses of red and white clovers are by Prof. Way of the royal agricultural society of England:

	Red Clover.	White Clover.
Water	81.01	79.71
Albuminous, or flesh-forming principles	4.27	3.80
Fatty matters	.69	.89
Heat-producing principles—starch, gum, sugar, &c.	8.45	8.14
Woody fibre	3.76	5.38
Mineral matter or ash	1.82	2.08
	100.00	100.00

One hundred parts of each of the varieties named, dried at 212° F., gave the following results:

	Red Clover.	White Clover.
Albuminous, or flesh-forming principles	22.55	18.76
Fatty matters	3.67	4.33
Heat-producing principles—starch, sugar, gum, &c.	44.47	40.04
Woody fibre	19.75	26.58
Mineral matter or ash	9.56	10.29
	100.00	100.00

These researches of Prof. Way are most valuable contributions to the science and art of agriculture. Boussingault found the nutritive equivalent of red clover hay, taking English hay as the standard, to be as 79 is to 100; the difference of result obtained by Fresenius in a like experiment need only be looked at. Thaer, a most careful experimenter, found its practical value in feeding to bear the same relation to English hay as 90 to 100. He found the nutritive equivalent of red clover in the green state to be as 311 to 100, and its practical value in feeding to be as 450 to 100.—If clover for hay is left till very ripe without cutting, the starch and sugar of the plant will change to woody fibre, thus causing brittleness if much exposed, and rendering the hay almost valueless. The nectaries of clover heads, when fully developed, are rich in a honey-like liquid, hunted for by bees, and if the crop is mown before the seed ripens this saccharine property will be preserved. In growing seed, it is common to pasture the first year's growth, or cut a crop of hay, and leave the second growth for seed; but if the cutting is not done early, the frost may check its growth, thus preventing its maturity. After threshing, it is run through a hulling machine, and then a fanning mill. Clover is much more succulent than any of the grasses usually grown for hay, requiring more time to part with its moisture, and should be cut only when free from dew. If dried by a hot sun, it heats in the sward, wilts, becomes dark-colored, and loses flavor and aroma. It should be saved in the cock, and only so much mown at one time as can easily be brought under cover if rain threatens. Make no hand or rake rolls; use forks; any unnecessary compression breaks the structure of the plant, and makes the sap exude, which should as much as possible, while parting with its moisture, leave the elements in solution as nature distributed them through the plant. The usual application of salt at the time of putting it in the mow is beneficial. In special cases the mixing of clover hay with straw or other fodder of the previous season is desirable, especially if it be not thoroughly dried. Green clover hay imparts flavor, aroma, and freshness to old fodder, thus causing animals to relish the admixture.

CLOVER HULLER, a machine for separating clover seed from its bolls. It consists of a cylinder armed with numerous small spikes, and driven at a high velocity close to a concave armed with similar projections. The seed is fed in between these from a properly adjusted table, and separated by the force and number of the blows it receives from the spikes of the cylinder as it is retarded in passage by the projections of the concave. In another machine for this purpose, the cylinder and concave are covered with strong band iron, cut like a file and case-hardened. In this machine the process of separation is, therefore, one of grating rather than concussion; and when it is considered with what an astringent tenacity these bolls adhere to their kernels, it would seem that this is the more philosophic process, and especially as it secures a saving of power in the lesser velocity required in the cylinder. These machines are now generally made with winnowers in the same frames, and the two operations of separating the seed and cleansing it from its chaff are thereby performed at once.

CLOVES, a celebrated spice of the Molucca islands, so called from the resemblance to small nails, and designated in all countries wherever known and used by a term having this signification. The Portuguese, who were the first Europeans to visit the clove islands, called the spice *cravos;* the Spaniards, *clavos;* whence is derived our *cloves.* The French *clou de girofle*, or clove-nail, is partly derived from the Latin *cariofilum*, mentioned by Pliny, or *gariofilum*, as mentioned among a list of commercial products in the time of the emperor Aurelian; which term is derived from the Arabic *karnafil*, or *kronfel* of modern dialects, and the *kalafur* of the Persians. The most common name of the spice in the East Indian archipelago is *changkeh*, which is derived from the language of the people the most actively engaged in its distribution in ancient times, from the Chinese *tcheng-kia*, signifying "fragrant nails." The name given by the modern masters of the trade in this famous vegetable product, the Dutch *kruidnagelen*, signifies "herb nails;" and in German it is *Gewürznägelein, Gewürznelke.* These different names, given by the carriers and traders in the spice, are not known to the native producers. The only name used by the people of the Moluccas is *gohmede*, which is of Sanscrit origin, and signifies "cow's marrow;" and this, in the recondite language of the Indian peninsula, the seat of cow worship, must be regarded as a term designating a most precious substance; yet the spice islanders, like the Malays of Sumatra in regard to pepper, and the Javanese in respect to coffee, make no use whatever of the most famous product of their country.—The clove of commerce is the product of the largest and most elegant of the myrtle family, the *caryophillus aromaticus* of Linnæus, and is described by Rumpf, the intelligent and industrious naturalist of the Moluccas, in his *Hortus Amboynensis*, as "the most beautiful, the most elegant, and the most precious of all known trees." In its native soil, which is confined to the 5 insignificant islets, Ternate, Tidor, Mortir, Makian, and Batshian, on the west of Gilolo, the true and original Moluccas, t[illegible] grows to a height of 40 feet, begins to b[illegible] spice blooms in its 7th year, and attains [illegible] age varying between 100 and 200 years. [illegible] trunk is perfectly straight, the bark smo[illegible] of a light olive color; about half the he[illegible] branches spring out horizontally and [illegible] diminishing in length as they ascend, [illegible] the compact mass of foliage, composed of sle[illegible] laurel-shaped leaves, forms a perfect co[illegible] ported by a clean straight stem. The sp[illegible] the fruit, as is very commonly suppo[illegible] the blossom, which is gathered before it [illegible] unfolded, when it resembles a closed-up c[illegible] vulus bloom. About a dozen of these form a terminal cluster at the extremity [illegible] twig and branch of the tree. The stem [illegible] spice is the calyx, and the head the un[illegible] corolla of these aromatic flower buds. Th[illegible] season for collection in the Moluccas is [illegible] cember; they are gathered quickly and [illegible] ly, and speedily dried in the shade befor[illegible] have an opportunity to exhale the [illegible] their aroma.—When the Portuguese [illegible] iards first visited the Moluccas, and w[illegible] lan's ship, the Victoria, took on boar[illegible] in 1521, the first cargo of spices that wa[illegible] to Europe, the Molucca islands were [illegible] by a numerous, enterprising, and [illegible] population, for the almost exclusive pro[illegible] of their great staple. Malacca was the ch[illegible] porium of the trade in cloves, from w[illegible] were carried by various transits to e[illegible] the then civilized world. Barbosa [illegible] was sold by the producers at 2 Ven[illegible] the bahar of 590 lbs., or less than h[illegible] a lb., and was worth 6 times this [illegible] lacca; and after passing through [illegible] ha[illegible] the Alexandrians, Venetians, and o[illegible] of the Mediterranean ports, it becam[illegible] in value, until it attained the eno[illegible] 30 shillings sterling per lb. in [illegible]. According to De Cauto, the annual q[illegible]ty produced was 5,900,000 lbs., and the ave[illegible] annual production of each tree was 50 lbs. of cloves.—The Portuguese held the spice islands for 93 years, restricting the culture, and preventing the free exportation of the article. When the Dutch drove the Portuguese out of the Moluccas in 1605, they established the clove culture in the island of Amboyna, where it had been partially introduced by the natives prior to the Portu-

Then commenced the process
of every clove tree that grew
ls which were their natural
year an expedition of soldiers
orers was sent to Ternate, Tidor, Mor-
and Batshian, to cut down every
which migratory birds might chance
in the native soil; and every native was
d with death who was known to plant a
or sell one pound of its spice blossoms.
forests were destroyed, the fertile
soil was washed away by tropic rains
d up by a tropic sun; the land became
the people, who had lost their trade
tence, perished of starvation at
aves in the clove plantations of Am-
Not only were the clove trees of the
destroyed, but also a large portion of
of Amboyna was annually burned,
enhance the value of what remained
ls of the sordid and foolish monopo-
se annual burnings were continued
year 1824; and although the clove
n in the Moluccas has been neg-
years, an uprooting expedition
s the desolate islands, in conform-
aw of the Dutch East Indies still in
clove tree in Amboyna falls far
uration and productiveness when com-
the tree in its native region. In
t does not begin to bear spice till its
, and its duration is not more than 70
It is grown still less advantageously at
oints where its culture has been intro-
t Bencoolen in Sumatra, in the Straits
nts, at Zanzibar, in the French islands
nion (formerly Bourbon) and Cayenne.
introduced in Bencoolen in 1798 by Mr.
nd in Cayenne in 1770 by M. Poivre. The
ties mentioned in commerce are those of
na, Bourbon, and Cayenne. The clove
has defied all efforts, skill, and care to
he same perfection to which it attains
ve soil. It requires tropic heat, a
declivity, with loose, dry, volcanic soil,
quent overshadowing of vapory clouds;
hich circumstances are only found com-
the Moluccas. The average annual pro-
the Dutch monopoly in cloves at Am-
and some of the neighboring Banda isl-
as for several years past been compara-
ll, and much inferior to the product
oluccas three centuries and a half ago,
ative rule and free labor. The price
in the Indian markets in 1857 was $11
the picul, or 133 lbs., for picked cloves,
reduces the annual revenue from this once
nt monopoly to a very low amount. The
might be produced as bountifully and
as pepper; and will be, when the better
ence of the Dutch of the present day, or
iser people, restores the culture of the
e to the Moluccas.—In the year ending
1857, the United States imported 1,-
lbs. of cloves, valued at $65,332. The
f cloves imported by France in 1856 was
$120,000. England imported in the first 8 months of 1857, 207,671 lbs., and in the same period of 1858, 1,424,261 lbs.

CLOVIS, the founder of the Frankish monarchy, born at Tournay about 466, died in 511. On the death of his father Childeric (481), Clovis, being but 15 years old, was proclaimed king by the Salian tribe, then residing within the territory of his native town. This territory was small, and the Salian warriors were few in number; nevertheless, within 30 years Clovis had secured for himself a powerful empire, and for his companions the possession of a fine country, once belonging to the Roman dominions. On his accession, Rome had been for 5 years in the hands of Odoacer, who had overturned the imperial throne; but the central part of Gaul was still governed by a Roman officer, named Syagrius. Clovis marched against him, assisted by a brother king, and followed by his valiant little band. The Roman was easily conquered in the vicinity of Soissons (486), and fled to the Visigothic court at Toulouse; but upon the menaces of Clovis he was given up, and afterward put to death. The whole Belgic country, the cities of Soissons, Rheims, Troyes, Beauvais, and Amiens, submitted to the victor, who rapidly extended his dominion from the Scheldt to the Loire. He thus became one of the most powerful princes in Gaul, and was courted by the Catholic bishops of that country, who saw in him the future supporter of their faith. They succeeded in giving him as a wife Clotilda, the only Catholic princess in Gaul. At first she found him reluctant to renounce the worship of his national god, and it is narrated that a miracle was required to overcome his resistance to Christianity. The Alemanni had crossed the Rhine, and following in the footsteps of the Franks, intended to settle in the rich plains of Gaul. Clovis hastened to repel them, and in a battle near Tolbiac (496) they were already raising the shout of victory, when Clovis in despair thought of the God of his wife, and throwing himself on his knees, exclaimed: "God of Clotilda, give me assistance in this hour of necessity, and I confess thy name." The course of victory was immediately turned; the Alemanni fled, while the flower of their forces and their king were killed. Within the same year, Clovis, true to his vow, was baptized at Rheims by Bishop Remy, and with him 3,000 of his companions. In a short time, this example was followed by the greater part of the nation. Henceforth Clovis became popular among the Catholics in Gaul, all the bishops of that communion, impelled by their opposition to the Arians, representing him as the deliverer of the faithful. Yielding to the entreaties of his queen Clotilda, Clovis entered Burgundy at the head of his troops, conquered Gundebald near Langres, took possession of several important cities, but finally contented himself with laying a tribute on the Burgundian kingdom. In 507, having summoned his warriors to the banks of the Loire, he thus addressed them: "I am displeased with those Arians possessing that beautiful country of Aquitania; let us go there and take it at once, for the land is very good." He then crossed the Loire and fell upon the Gothic army not far from Poitiers. The Visigoths were routed, and their king Alaric was slain by Clovis. The greater part of Aquitania submitted to the Catholic conqueror. Theodoric, the king of the Ostrogoths, however, succeeded in retaining Septimania. Clovis was then the sovereign of the whole country from the lower Rhine to the Pyrénées, bounded E. by the Vosges and the Cevennes, with the exception of several small districts in the north still belonging to Frankish princes of his own family, some of whom had even assisted him in his wars. But he resolved to get rid of all these petty rivals. In the execution of this purpose, he resorted to the most revolting devices which treachery and cruelty could suggest, and was soon the only monarch of his race. He did not long enjoy that honor; he died when only 45 years old. He left 4 sons, between whom he had himself divided his empire. Theodoric, the eldest, born to him by a first wife or mistress, probably of German descent, obtained the eastern country bounded by the Rhine and the Meuse, with the western part of Germany and some provinces in Aquitania; Childebert, Chlodomir, and Clotaire, sons of Clotilda, were kings at Paris, Orleans, and Soissons, the last finally uniting under his power the dominions of his brothers.—Two other Merovingian princes of the same name, Clovis II. and Clovis III., lived in the 7th century; but they were mere tools in the hands of powerful mayors of the palace, and belong to that succession of Frankish kings known as the *rois fainéants*.

CLOWES, JOHN, an English clergyman, born at Manchester in 1743, died in 1831. He was a fellow of Trinity college, Cambridge, and in 1769 was made rector of St. John's church, Manchester. Having become in 1773 a disciple of Swedenborg, he was thenceforward earnest in promoting the doctrines and teachings of that remarkable man. Yet, although he openly avowed his belief in Swedenborg and his tenets, he continued to hold his rectorship under the church of England as long as he lived. He is the author of many works, mostly translations from Swedenborg, and books relating to the religious doctrines of that teacher.—WILLIAM, an English printer, born at Chichester, Jan. 1, 1779, died Jan. 26, 1847. He was first apprenticed to a printer in Chichester, and in 1802 went to London, where, after having worked as a compositor in a printing establishment on Tower hill for some time, he commenced business on his own account in 1803. By his diligence and energy, his punctuality and obliging disposition, he obtained the highest success as a printer, and before his death was the head of the largest printing establishment in the world, containing 24 steam presses, 28 hand presses, and giving employment to 600 persons. For 14 years he was the printer of the well-known "Penny Magazine" and "Penny Cyclopædia," and was an important agent in the creation of a cheap literature in England.

CLOYNE, a market town of I [illegible] . 1[illegible] S. E. of Cork; pop. in 1851, 1,71[illegible]. [illegible] was built and a bishopric erected here [illegible] Colman in the 6th century. In 1734 the [illegible] brated Berkeley was made bishop of C[illegible]

CLUB, a word of Saxon derivation, [illegible] ing a society of persons united for [illegible] mon purpose, as for political, social, sc[illegible] tistic, or literary ends, or for purpose[illegible] tion. Clubs differ from mere [illegible] having some social bond, such [illegible] meeting, where the members [illegible] footing of equality. The mode[illegible] differs considerably from those of two [illegible] since, which last better answer Jo[illegible] nition of "an assembly of good [illegible] ing under certain conditions." Such [illegible] Jonson's club at the "Devil Tavern." [illegible] cal clubs came into existence at a later [illegible] The King's Head club was a famous [illegible] society of Charles II.'s days. Clubs bec[illegible] merous in England about the b[illegible] century. The Brothers' club, o[illegible] broke, Harley, and Swift were [illegible] mbers. [illegible] Hanoverian club, the Beefsteak [illegible] over by Peg Woffington the [illegible] Kit-kat club, flourished in this [illegible] was established the second Be[illegible] which still exists, and which has [illegible] among its members the m[illegible] men. The Literary club [illegible] 1764 by Samuel John[illegible], Bu[illegible] Reynolds, Goldsmith. [illegible]rke, a[illegible] still in flourishing e[illegible]nce. The [illegible] Friends of the People [illegible] bl[illegible] don in 1793, for politi[illegible] Grey. From England the d[illegible] cal clubs" spread to similar [illegible] France and other countries. They [illegible] hibited in Germany by a law of the [illegible] 1793. In France they were the fo[illegible] revolution. The first French society [illegible] the name of club was the *club politi*[illegible] lished at Paris in 1782; a second was [illegible] in 1785 under the name of the *c*[illegible] *de*[illegible] *des Americains*; and afterward [illegible] of club was adopted by most pol[illegible] The most celebrated [illegible] of the re[illegible] period were the clubs [illegible] *Bretons*, *Cordeliers*, at [illegible] d of [illegible] Marat, Hébert, and Ca[illegible] *de Montrouge*, of which [illegible] clos, Latouche, Sillery, and others [illegible] bers; and the *club des enragés* [illegible] terre and Henriot were le[illegible] revolution of 1848 brought [illegible] clubs; such were the *club Bla*[illegible] *de la Révolution*, &c. The [illegible] London, as well those n[illegible] those claiming no such dis[illegible] tle else than private hotels for [illegible] members. The large cl[illegible] the principal, with the [illegible]

ach is limited, are: the Army and
lub, 1,450 members; United Service,
Junior United Service, 1,500; Athenæ-
0: Reform, 1,400; Conservative, 1,500;
1 0; Oxford and Cambridge, 1,170;
, 1,000; Carlton, 800, exclusive of
members of parliament; Travellers',
nite's, 550; Brooks's, 575. The small-
nce fee is paid by Brooks's, £9 9*s*., with
al subscription of £11 11*s*.; the great-
11*s*., by the Union, with an annual fee
All these clubs own the handsome
in which they meet. The principal
New York are the Union, the Century,
New York club. One of the oldest of
ciations in America is the Wistar club,
elphia.

-FOOT, a deformity arising from rigid-
contraction of the muscles of the leg,
the individual walks, with one or both
the toes, on the external or internal
f the foot, or in some rare forms on the
the top of the foot. This deformity,
nay be congenital or accidental, was
to Hippocrates; Celsus gave the names
valgus, which are still used, to two
eties; but the true anatomical his-
affection may be dated from 1803,
carpa published his memoir on the sub-
n the simplest form, called *talipes equi-*
heel is so raised that the person walks
ll of the foot; this may vary from an
n of an inch or two to a perfect continu-
the axis of the leg with that of the
y be complicated with distortion in-
outward, and, in old cases, with per-
flexion of the leg on the thigh from con-
of the hamstring muscles. In *talipes*
hich is the most common, the distortion
complex; the heel is raised, the inner
the foot is drawn upward, and the
oot is twisted inward, so that the per-
on the outer edge, and, in extreme
the top of the foot and the outer
In this form the limb is small, the mus-
the calf feebly developed; the toes ar-
vertically, the great toe uppermost; the
he foot very concave, and the back very
the external ankle turned backward,
y near the ground, the internal high up
roaching the heel bone; a callus on the
which corresponds to the sole.
difficult and fatiguing, and the
position insecure; when existing in
s, the feet must be constantly crossed
ch other in walking; from the inward
of the limb the knee is turned out-
hich increases the difficulty of standing
king firmly. The joints are generally
, the tendo Achillis tense, shortened,
ed inward with the heel. In new-born
the foot can be brought into the natu-
ion, and in them *varus* is almost always
d with some degree of the first variety;
the two are usually combined, giving a
er of intermediate forms. In *talipes*
valgus, the characters are the opposite of *varus*; the outer edge of the foot is raised up, and the person walks on the inner ankle and metatarsal bone of the great toe; the foot is strongly turned outward, as is the heel; the internal border is convex and the external concave; in this variety walking and standing are still more difficult and fatiguing. An extreme degree of *varus* has been described by Duval, in which the dorsum or back of the foot touches the ground; in its first stage the foot rests on the dorsal surface of the great toe, the other toes being rolled inward toward the sole; in the second, the deviation begins further back, and the metatarsus is bent at a right angle toward the sole; and in the worst form the whole anterior part of the foot is turned back, the dorsum resting on the ground and the sole turned upward. This is usually congenital, and accompanied by deformity and stiffness in the other joints of the limbs, and depends on contraction of the flexors of the toes and the muscles of the calf. A fifth form is described, in which the toes are turned upward, the dorsum of the foot approaching the anterior surface of the leg, and the person walking on the heel. Club-foot consists essentially in a contraction, rigidity, and atrophy of the muscles of the calf, the deformity taking place in whichever direction the muscular equilibrium is the most easily disturbed; the principal exciting causes are such as interfere with the innervation and nutrition of the muscles, such as confinement during long sickness, injuries of the spine and nerves of the lower extremity, disuse of the limbs from any cause, rheumatic and other inflammations of the muscles of the calf. Various causes have been assigned for congenital club-foot, such as vicious positions of the fœtus, and mental and physical affections of the maternal system, such as are generally supposed to cause arrests of development. Convulsive diseases in infancy often cause permanent contraction of the muscles and consequent club-foot; when the fashion of wearing high-heeled shoes prevails, it is very common to find a commencing elevation of the heel from contraction of the muscles connecting with the tendo Achillis, which might end in club-foot were fashions of sufficiently long duration to induce a permanent shortening of the muscles. Before the time of Scarpa it was supposed that there was in club-foot a dislocation of the bones of the tarsus and metatarsus; he maintained that there was rather a torsion of the scaphoid, cuboid, and os calcis, which would carry with them in the same direction the rest of the foot. The deformity may depend on an abnormal conformation of the astragalus and cuboid bones, with deviation of the anterior bones, this being especially the case in congenital club-foot; and in some rare forms there may be dislocation of the astragalus, though in most cases this bone preserves its normal relations to the tibio-tarsal articulation. In *varus*, the scaphoid and cuboid, and heel bones are rotated outward, and the ligaments which bind the last two are generally

relaxed; in congenital cases all the bones are small, and the muscles wasted, and the limb is cold and feeble, indicating imperfect nutrition and innervation; the tibialis anticus and posticus, the flexors of the toes, and the muscles of the calf, being stronger than the peroneal muscles, increase the torsion as age advances, and the tense tendo Achillis draws the tuberosity of the os calcis obliquely upward. In *talipes equinus* the astragalus is more or less dislocated forward, and may be felt under the skin at the top of the instep; when the foot is rolled backward, the bones of the tarsus are more or less separated on their dorsal surface, and the joints below are proportionally approximated; the dorsal ligaments are thin and elongated, while those of the sole are shortened and thickened. In *valgus*, the deviations of the tarsal bones are the opposites of those in *varus*.—In children the prognosis is more favorable than in adults, on account of the flexibility of the muscles and the suppleness of the joints. Until the latter part of the last century the only means employed for the treatment of club-foot were various kinds of bandages and apparatus for extension; these were inconvenient, painful, expensive, requiring years of trial, and useless except in the simplest cases and in early childhood. The indications for treating club-foot are fulfilled by the division of the tendo Achillis, or any other contracted tendon or tense fascia, and an apparatus for extending the foot at right angles with the leg. The tendo Achillis had been for many years frequently divided in veterinary practice, but was not interfered with in man for the cure of club-foot until about the year 1782; though an acknowledged operation in surgery, it was not practised in France until 1816, when Delpech performed it with indifferent success; it had become almost forgotten when Stromeyer revived it in 1831; since that time the operation has become improved and simplified, and the apparatus for extension rendered efficient by Duval, Bouvier, Guérin, Roux, and the best surgeons of Europe and America. Tenotomy, as the operation is called, has been performed at all ages, from a few weeks to 50 years, and has been applied not only to the tendo Achillis, but to the flexors of the toes, the plantar fascia, and any of the tendons surrounding the ankle joint which seem to aid in producing the deformity. The operation is so simple, so free from pain, so easily performed, so little liable to unfavorable consequences, and generally so speedily efficacious, that it seems unpardonable, unless in a few exceptional cases, for a surgeon to submit his patient to the plaster moulds, starched bandages, and other immovable apparatus of the old method. The divided tendon heals by a callus, which, when recent, may be extended to any desired length; the wasted antagonist muscles, being relieved from tension, gradually recover their power. At first the knife was passed under the tendon, piercing the skin largely on both sides of the limb, and extension was not applied until the 5th week, when the divided ends had contracted adhesions and lessened the chance of a favorable result. Stromeyer improved upon this by making a single puncture of small size, and by putting on the apparatus in the course of the 2d week. The tenotome is generally blunt pointed, the skin being pierced by a lancet; it is introduced on the inner side of the limb, and is made to cut the tendon, previously put upon the stretch, from before backward, or toward the skin, without wounding the latter; this subcutaneous operation is painless, bloodless, and, from the exclusion of air from the wound, not liable to be followed by inflammation; extension should be applied as soon as it can be done, without causing too much pain.

CLUE OF A SAIL is either one of the lower corners of a square sail, but only the after corner of a fore and aft sail, the forward corner being called the tack. The clues of a square sail are hauled down by ropes called sheets, the courses having a double set of ropes called tacks and sheets. The clues are hauled up by means of clue lines or clue garnets, which descend from the centre of the yards.

CLUNY, a town in France, department of Saône-et-Loire, on the little river Grône, in a valley between 2 mountains, and 200 m. S. E. of Paris; pop. 4,411. Until the founding of a Benedictine order of monks there, known in history as the monks of Cluny, the town was a mere village. Before the revolution the abbey of this order had 600 religious houses dependent upon it, and enjoyed a revenue of $60,000 a year. The monastery was plundered by the Huguenots 3 times, and the library, which was one of the best in France, was finally destroyed or scattered in the revolution, and the monastery itself appropriated to other uses, mostly educational. The abbey church, one of the finest monuments of the middle ages, was completely destroyed. The cloisters now form a sort of public square, and a fragment of the abbot's palace is used as a private dwelling.

CLUSIUM, an ancient city of Etruria, and one of the 12 that composed the Etruscan confederacy, was situated on the right bank of the river Clanis, about 100 m. from Rome. It is said to have been built by the Umbrians at a very ancient period, and is mentioned by Virgil as one of the cities that sided with Æneas. Its original name was Camars, but when the Tuscans obtained possession of it they changed it to Clusium. The little state of which it was the capital attained the zenith of its power under the celebrated Porsena, who espoused the cause of the Tarquins and waged a long war against Rome. In 391 B. C. it was besieged by the Gauls, and again in 295. In the 2d Punic war the Clusians took part against Hannibal, and in the wars of Marius and Sylla they espoused the cause of the former. Under the empire, Clusium gradually dwindled into a small municipal town, and at length disappeared from history. A village called Chiusi, containing about 1,700 inhabitants, now occupies in part the site of this ancient city. One of the most interesting objects in the vicinity of

is the famous labyrinthine sepulchre of
a.

SIUS, or ECLUSE, CHARLES DE L', a French
born at Arras, Feb. 18, 1526, died in
, April 4, 1609. He studied under Ron-
ravelled in different parts of Europe, and
ttling at Antwerp, began to publish his
al researches. The emperor Maximilian
ointed him director of the botanical gar-
Vienna. In 1593 he was called to oc-
ie chair of botany at Leyden.

VERIUS, or CLUVIER, PHILIPP, a Ger-
ographer, born at Dantzic in 1580, died
in 1623. Sent to the latter city to
r, he was confirmed by Scaliger, whose
ne attended, in his taste for geography.
ier withdrawing his support from him, he
2 years as a soldier in Hungary and Bohe-
d was afterward imprisoned in the latter
r for translating into Latin a paper which
noxious to the government. After his
which soon followed, his mother secretly
d him with money, and he set out upon
raphical tour, visiting England, where
ded some time, and travelling through
d, France, Germany, and Italy. At
he made the acquaintance of Drs. Hol-
d Prideaux; and upon returning from
t to Italy, Dr. Prideaux, who appears to
teemed him highly, procured him offers
otion. But he preferred returning to
where the university gave him an an-
d to assist him in his favorite pursuits.
wo works upon ancient geography, espe-
f Italy, Sicily, and Sardinia, of Germany,
the Low Countries, and was also noted
linguistic attainments.

DE, the most important river of Scot-
ses in the southern part of Lanarkshire,
the northern declivities of the chain of
hich may be regarded as a part of the
ts, dividing Lanarkshire, Peeblesshire,
shire, and Roxburghshire from Dumfries-
It runs principally in a north-westerly
on, passes through Lanark, Hamilton,
ell, Rutherglen, Glasgow (which is the
ship navigation, and the most important
rcial town of Scotland), and Renfrew;
ls into the great estuary formed by the
rence of its own waters with those of
ong, coming down from the northward,
as the frith of Clyde. This large river-
or arm of the sea, flows southward, be-
the isles of Bute and Arran, which divide
ie west from Loch Fyne and Kilbrannan
and the shores of Renfrewshire and
re; off the latter of which it enters the
sea, between the mull of Cantire and
lm point, in Wigtonshire, nearly opposite
for point, the extreme north-eastern pro-
y of Ireland. Its total length, to the S.
f Bute island, is about 115 miles. The
of the Clyde is one of the most interesting
richest in old historic and legendary lore,
as in agricultural and commercial wealth,
he beautiful vales of Scotland. Its magnificent falls of Corra Linn and Stonebyres have been described by the most eloquent pens of the land, and its banks are the scene of one of the best of Walter Scott's romances, the fine tale of "Old Mortality." The valley of the Clyde is famous for a peculiar race of strong black cart horses, known as the Clydesdale breed. Commercially, the *embouchure* of the Clyde monopolizes all the American, West Indian, and South American trade, beside attracting to itself a large portion of the Indian and Australian business. This is the more remarkable, since the Clyde is, for the most part as a navigable river, an artificial stream. Formerly a shallow, torrent-like, sandbank-encumbered river, it has been by scientific applications converted into a fine, uninterrupted, easily navigated avenue for ships of large burden deeply laden, up to the splendid wharves of the great city which has grown up on its banks, the child of the wealth brought to her by its waters. The Forth and Clyde canal, which enters the latter river a little way below Kilpatrick, some 10 m. lower down the river than Glasgow, connects it with Borrowstounness, on the Forth, about 30 m. above the principal eastern seaport of Leith, and affords a perfect communication between the eastern and western coasts. It was commenced in 1777, and completed in 1790. Its total length is 35 m.; its greatest elevation, at its summit level, is 156 feet, which it reaches in 10¼ m. by means of 20 locks, while on its descent to the western tide water, which it reaches at Bowling bay, it has 19 locks. When full, it can carry vessels drawing 8 feet of water, and its locks have a length of 74 feet by a width of 20. It was the earliest considerable Scottish work of the kind, and continues to this day to be one of the most important, being the great connecting channel for the trade of the eastern and western coasts of the kingdom. There is also a branch to this canal of 2¼ m. in length, terminating directly in Glasgow, to which city it is of advantage.

CLYMER, GEORGE, one of the signers of the declaration of independence, born in Philadelphia in 1739, died at the residence of his son in Morrisville, Bucks county, Pa., July 23, 1813. His father, a respectable emigrant from Bristol, England, settled in Philadelphia, and left him an orphan at the age of 7 years. William Coleman, his maternal uncle, bestowed on him a good education, and eventually left him the bulk of his fortune. On leaving school, he went into his uncle's counting house, but he spent much of his leisure in study. In 1765 he married Miss Elizabeth Meredith, and joined the commercial house of his father-in-law. His first appearance in political affairs was as a speaker at the "tea meeting" held by the citizens of Philadelphia, Oct. 16, 1773. Here his opposition was so spirited that he was appointed chairman of the committee which requested the tea agents to resign. For the next 20 years Clymer was a prominent man. He was member of most of the preliminary committees, and of the council of safety. He also took command of a company under Gen. Cadwallader, but did little military duty, his services being more valuable in a civil capacity. On July 29, 1775, he was appointed, jointly with Michael Hillegas, to the care of the public treasury, and in this position proved the sincerity of his belief in the future by converting all his specie into continental currency, beside subscribing liberally to the loan. July 20, 1776, Clymer, Dr. Rush, Wilson, Ross, and Taylor were appointed to succeed those members of the Pennsylvania delegation to congress who had declined to subscribe the declaration of independence. The new members appended their signatures, Clymer's being the 38th name after John Hancock's. In Sept. of the same year he was sent with Stockton to Ticonderoga, to confer with Washington on future action and on the affairs of the army. When in Dec. the congress retired to Baltimore, Clymer was one of the commissioners left in Philadelphia to guard the public interests. Next year he was again returned to congress, was again sent to confer with Washington, and having removed his family to Chester county, had his home plundered by the British after the defeat of Brandywine. In Dec. 1777, Clymer, Col. Samuel Washington, and Gabriel Jones were sent as commissioners to treat with the hostile Indians at Fort Pitt, but failing in their negotiations returned after 4 months absence, and recommended compulsory measures. In 1780 he was a 3d time elected to congress, and in Nov. of the same year was deputed, with John Nixon, to organize the bank of North America, and in 1782 was associated with Rutledge in his mission to the southern states. At the close of the war he removed to Princeton, but was permitted to enjoy only a short retirement, being in 1784 elected a member of the Pennsylvania legislature, against the "constitutionalists," or party who supported the old constitution. He did good service in the state legislature by modifying the cruelty of the criminal code. He was opposed to the death penalty excepting for murder in the first degree, and was in favor of substituting solitary confinement with hard labor, for the employment of criminals in public gangs. Beside other institutions indebted to him, were the Pennsylvania agricultural society, of which he was vice-president; the academy of fine arts, and the Pennsylvania bank, of both which he was president. He was a member of the convention that framed the federal constitution, and in Nov. 1788, was elected a member of the first congress under that instrument. In 1790 he declined a reëlection, and in the succeeding year was appointed collector of the excise duty on spirits, the collection of which in Pennsylvania led to the whiskey riots. Clymer acted firmly yet temperately in the troubles, till finding the office distasteful, he resigned it, and was appointed, with Messrs. Pickens and Hawkins, to negotiate a treaty with the Cherokees and Creeks in Georgia. This being completed, June 29, 1796, he withdrew from public affairs. In person, George Clymer was of medium stature, fair complexion, with a strongly marked, but attractive expression of countenance, in harmony with his character, which was honest, frank, and republican. No man was more averse than he to the assumptions of aristocracy, to the excellencies, honorables, and esquires, who, he said, abounded more in the United States than in any other country of the world. He seldom spoke in public, but when he did his ideas were expressed in language keen, pithy, and laconic. His views on naturalization were, that foreigners might be admitted to hold property after a certain residence, but that a longer period should be required before permitting them to exercise the elective franchise.

CLYTEMNESTRA, the daughter of Tyndarus, king of Sparta, and Leda the mistress of Jupiter, who, after her seduction by the god under the disguise of a swan, is fabled to have laid two eggs; from one of which were produced Pollux and Helen, said to be the children of Jupiter, and from the other Castor and Clytemnestra, children of Tyndarus. Clytemnestra was given in marriage by her father to Agamemnon, as was her sister Helen to Menelaus, the sons of Atreus, king of Mycenæ; the former of whom succeeded his own father on his throne, while the latter succeeded his father-in-law on that of Sparta. Helen was abducted by Paris, and Agamemnon being made commander of the fleet was compelled, in order to obtain a fair wind for the armada, to sacrifice his daughter Iphigenia. During his absence, Clytemnestra lived in adultery with Ægisthus, and on her husband's return from the capture of Troy he was slain by her in a bath, as was his paramour Cassandra, in alleged retribution for the death of her daughter Iphigenia. Clytemnestra and Ægisthus were afterward, in their turn, slain by Orestes, son of Agamemnon.

CNIDUS, or GNIDUS, the chief city of the Dorian hexapolis in Caria, was built at the extremity of the peninsula of Triopium, partly on the mainland and partly on an island connected by a causeway, forming 2 harbors. It was founded by a Dorian colony from Lacedæmon, had an extensive commerce, and was visited by travellers from all the Grecian cities, attracted by the worship of Venus Aphrodite in the temple which contained the celebrated statue of the goddess by Praxiteles. There were also temples of Apollo and Neptune. It was off Cnidus that the Athenian Conon defeated with the Persian fleet that of the Spartans (394 B. C.), thus depriving them of the command over the sea. Ctesias, Eudoxus, and Sostratus were natives of this city, of which considerable ruins are still visible near Cape Krio.

CNOSSUS, or GNOSSUS, more anciently CNOSUS or GNOSUS, now Makro Teikho, the capital of Crete in the time of Minos, was built on the Cæratus, a short distance from the northern coast, and founded by Dorians, who diffused their institutions over the island. Homer mentions it as already a great city, and the

he celebrated Cretan king; it long
l its preponderance, until it was
by the growing importance of Cy-
Gortyna. It was renowned in my-
numerous legends of Jupiter, born,
nd buried in its vicinity, of Minos,
he minotaur, and the labyrinth. In
it became a colony of the Romans.
us, the sceptic philosopher, and Cher-
architect of the temple of Diana in
vere born here.

(Ger. *Kutsche*, Fr. *coche*, probably
Iungarian *Kotse*, the ancient name of
the county of Wieselburg, in which
ere made in the 16th century), a cov-
eeled carriage, and, as usually applied,
those employed as public conveyan-
se rs. The vehicles designated by
ually altered in the different Eu-
ges from the original Hungarian
een so variously constructed, that
nay properly be treated as applicable
ered carriages, including those used
oads. Mention of chariots is found
st ancient records of the human
were in use by the Pharaohs of
u. xli. 43), and in Solomon's time were
Syria (1 Kings x. 29; 2 Chron. i. 16
As appears from the ancient Egyp-
s and paintings, the construction
iots embodied the same principles
ound in the modern style of car-
wheels were made with spokes and
s, and the pole was crooked near the
n introduced into English carriages
the commencement of the present cen-
lrawing of one with 4 wheels, used for
arposes, has been met with, and others
mbrella cover, the rudiment of the
ring of more modern vehicles. The
drawn by oxen, and were apparently
or travelling carriages for ladies of
metimes the king's chariot was also
rotected. From the sculptured slabs
similar evidence is obtained of the
iages by the Assyrians and contem-
nations. Layard remarks in chap-
his "Discoveries among the Ruins
h and Babylon:" "The Elamites, we
these bass-reliefs, used even in war,
riots, a kind of cart drawn by mules
ting of a flat stage raised upon lofty
hich had as many as 12 and even 16
The largest of these cars could hold 5
ns, and were adorned with a fringed
lered cloth. The smallest, it would
ntained only 2, the warrior and the
who sat on a kind of raised seat.
are probably alluded to by the pro-
iel, when he speaks of the 'chariots,
nd wheels' belonging to 'the Babylo-
all the Chaldeans, Pekod, and Shoa,
and all the Assyrians,' who should
gainst Jerusalem (Ezek. xxiii. 23, 24)."
ans made use of several forms of car-
he *carpentum*, seen on antique coins,
was a 2-wheeled car with an arched covering. Covered carriages highly ornamented became appendages of Roman pomp and magnificence; but under the feudal system they were banished on account of their tendency to render the people effeminate. During the middle ages the only riding practised was on horseback; and when near the close of the 15th century carriages began again to appear, they were esteemed proper only for women and invalids. The emperor Frederic III., it is stated, came to attend the council in 1474, at Frankfort, in a close carriage, and the next year visited the same city in a very magnificent covered carriage. In the 16th century the German princes appear to have vied with each other in the number and splendor of their equipages. At the tournament in Ruppin in 1509, the electress of Brandenburg appeared in a carriage gilt all over; there were 12 other coaches there ornamented with crimson, and one of the duchess of Mecklenburg hung with red satin. The use of coaches, though prohibited to the feudal nobility and vassals by the orders and admonitions of the great lords, became popular throughout the states, and gradually extended to all the countries of Europe. The want of carriage roads, and the narrowness of the streets of many of the cities, were no doubt serious impediments to their introduction. Even as late as the 16th century people of the highest rank in France rode only on horseback, sometimes sitting behind their equerry on the same horse. Yet it would appear from an ordinance of Philip the Fair in 1294, forbidding citizens' wives to use carriages (*cars*), that they must have been known at that early time. About the year 1550 there were only 3 coaches in Paris. In 1610 Henry IV. was assassinated in his coach. The first notice of coaches being suspended by straps is of that in which Louis XIV. made his public entrance about the middle of the 17th century. Carriages called whirlicotes were in limited use in England in the time of Richard II. His mother was conveyed in one on the flight of the royal family in the rebellion near the end of the 14th century. Coaches were introduced in the year 1564, as Stow states, by a Dutchman, who became the queen's coachman. "After a while," he adds, "divers great ladies, with as great jealousie of the queene's displeasure, made them coaches, and rid in them up and downe the countries, to the great admiration of all the beholders; but then by little and little they grew usual among the nobilitie, and others of sort, and within twentie years became a great trade of coach making." In 1619 the duke of Buckingham used one with 6 horses, and the earl of Northumberland, to ridicule this pomp, appeared in one with 8 horses. The period in which coaches became familiar can therefore be referred but little further back than the time of the settlement of New England; and for a century afterward the use of private carriages in the country was limited to the aristocracy and wealthy classes. In London, coaches began to be kept

for hire in 1625. In 1673 there were 20 hackney coaches in Edinburgh, but the narrowness of the streets or state of the roads must have rendered them comparatively useless, for in 1752 there were only 14, and in 1778 only 9, while the number of sedans increased. The conveyances through the interior were the cumbersome stage wagons, used for carrying goods, in the tail of which, as it was called, was reserved a covered space for 6 or 8 passengers, who sat upon the straw on the floor. Even such accommodations as these were known only on the great thoroughfares, the conveyance of goods inland being for the most part by pack horses. Until the roads, toward the close of the 18th century, were so much improved that better carriages could be used upon them and higher speed was attainable than that of the ordinary wagons, the stage coaches of England were deficient in the despatch and comfort by which they were afterward characterized. Their era, however, was short, being soon succeeded by that of railways. In the reign of Charles II. stage-coach travelling was so poorly conducted, that 2 days were spent in going from London to Oxford, 58 miles; and in 1703, when Prince George of Denmark went from Windsor to Petworth, about 40 miles, to meet Charles of Austria, pretender to the throne of Spain, the journey occupied 14 hours, 6 of which were spent on the last 9 miles. The fact is spoken of by the historian as the more surprising, inasmuch as, except when overturned or stuck fast in the mire, his royal highness made no stop during the journey. In the middle of the 18th century the journey from London to Birmingham, 116 miles, occupied nearly 3 days by the stage coach; and the first regular public conveyance of the kind between London and Edinburgh appears to have been established not long before the year 1754, when "a two-end glass coach machine, hung on steel springs, exceeding light and easy," was advertised to go through in 10 days in summer and 12 in winter, the passengers lying over the included Sabbath at one of the villages on the route. At Amsterdam the use of wheel coaches was prohibited in 1663, on account of the injury they did to the expensive pavement; and the bodies were consequently placed on runners, as they are used in cold countries upon the snow.—Numerous forms of covered carriages have been introduced during the present century; too many indeed to be enumerated in this article. Hackney coaches drawn by 2 horses have generally given place in London to the one-horse cab or cabriolet, which came into use in 1823; but in the cities of the United States the former are altogether preferred. The long coach called an omnibus, with the entrance behind and seats along the sides facing each other, originated in Paris in 1827, and in 1831 it began to come into use in London. In large cities it is found the most economical form of carriage, except those running on rails, for conveying the largest number of passengers through the streets. In 1846 it was calculated that each one of 80 omnibuses upon the Paddington line took annually about £1,000 in sixpences. In New York city one was made in 1830, and ran upon Broadway. In 1858 the number of these coaches employed upon the various lines was 429; and this is a considerable reduction from the number of former years, owing to the construction of horse railroads in many of the streets. About 300 of these carriages are annually made in that city by one establishment, beside many more in Newark, N. J. Before the introduction of railroads, "post coaches" were largely employed upon the public roads; and the demand for them in all sections of the country caused large establishments for their manufacture to grow up where the skill, capital, and materials required could be best secured. Active competition led to continual improvement, and the carriages became models of perfect construction, combining strength with lightness and gracefulness of form, together with comfort to the passengers, in a manner unequalled in any part of the world. They were exported for the roads of Mexico and Central America, and the traveller everywhere was assured that the best provision was made for his comfort by the advertisement of "Troy coaches" being employed upon the route. They are made for carrying 9 passengers upon 3 seats inside, 2 with the driver upon the "box" in front, and 3 upon a seat behind this on the front edge of the top. The French diligences are unwieldy vehicles compared with these, and only adapted for smooth roads. They are formed in 3 compartments, the front one, called a *coupé*, having a seat for 3 persons facing forward; the middle apartment, the *intérieur*, has seats for 6, like a hackney coach; and behind this is the *rotonde*, with seats for 6 or 8 passengers, who sit with their backs to the sides of the carriage. On the front part of the top is the *banquette*, sometimes covered with a hood, with seats for 4 passengers. The driver rides one of the horses, of which 5 or 6 are commonly employed. Beside Troy, Albany, and New York, other towns that are especially prominent for the manufacture of carriages are New Haven and Bridgeport, Conn.; Pittsfield, Mass.; Concord, N. H.; and Newark, N. J. Boston and Philadelphia are also engaged in it to some extent. The most important manufactories of passenger cars for railroads are at Springfield, Mass., and at Troy, N. Y., the latter place furnishing large numbers for exportation; but these carriages are very generally made at points upon the lines of the principal roads throughout the country.—Few pieces of mechanical work require so great and varied skill as the construction of coaches. Their use demands lightness, and yet they must withstand the roughest service. They are to be subjected to continual strains and wrenchings, coming from every direction, exposed to all extremes of dryness and moisture, heat and cold; and used where repairs may be impracticable. The best materials are therefore selected and shaped with mathematical exactness. The frame is the nicest

iner's work, made with the toughest
as grown in exposed situations, and
ned by a seasoning of 2 years or more.
hickory, equally well prepared, are
r much of the work; and to the excel-
e latter wood may be referred some
erior points of American coaches.
ing is of strong elm, and the panels
t but stiff Spanish cedar. Mahogany
od are also sometimes used; and for
and other purposes, pine, bass, and
l. The frame, axles, &c., are thorough-
with pieces of the best refined metal,
fitted especially for this purpose, and
d by severe strains. The springs re-
est of steel. The leather employed is
or this particular use, and is of vari-
from the heaviest harness leather to
ielled and morocco for upholstery.
, silks, damasks, plushes, &c., in great
e used for the lining; and an especial
ed coach lace, has long been a consid-
le of manufacture in New England,
f the trimming and the holders. The
n of many of these and other articles
ress purpose are subjects of distinct
f all parts of the coach, none perhaps
eater skill in their construction than
. In these, the least materials are
heir forms and nice combination to
traordinary power of resistance; the
placed to receive the whole weight
of the carriage, always in the direc-
mpress longitudinally the fibres of
while no more of this is left to
weight than is necessary. But in
xposed to wear, weight is disregarded,
e hoops of the strongest iron encircle
ogether the nicely fitted fellies of ash,
oak, and nave of elm. The tires of
omnibus wheels are, when new, an
; but they are nevertheless expected
ut in 4 months' use. The greatest
aught requires large wheels, but also
ine of draught from the shoulder of
to the level of the centre of the for-
should incline at an angle of 15° with
n. This limits the size of the forward
from 40 to 44 inches in diameter, and
hat the horses should then work as
possible to the carriage. The hind
e from 50 to 56 inches in diameter,
dth of the track 4 ft. 8, or 4 ft. 10 inch-
ave of the wheels is lined with a me-
ingeniously contrived to exclude dust,
wheel from running off, and retain a
lubricating oil. For coaches designed
roads, leather straps are used to sup-
ody, and these are secured to upright
gs upon each axle. The painting of
is probably a more elaborate process
actised upon any other work. Three
ats of priming in common oil color
sively applied, and after this as many
hite lead and yellow ochre for a body.
ce is afterward rubbed smooth with
pumice stone and water, when it is ready for the selected colors and ornamental designs. Over these are laid several coats of the best copal varnish.

COACH-WHIP SNAKE (*psammóphis flagelliformis*, Catesby; genus *masticophis*, B. and Gd.), an American species, characterized by a long and narrow head, projecting upper jaw, superior orbital plates large and projecting much over the eyes; nostrils large, lateral, and near the end of the snout; eyes large, iris dark gray; neck small, body long, and tail attenuated like a whip-cord, which it also resembles in the braided appearance produced by the arrangement and dark border of the scales. The scales are smooth, and usually have 2 points at the apex; on the neck they are small, on the fore part of the body narrow and rhomboidal, on the tail short and broad. The color of the head, neck, and ¼ of the body is glossy black, becoming paler toward the tail, which is tawny brown; the scales on the tail have dark margins; the lower surface in front is bluish slate, behind white clouded with brown; the colors vary in their shades, but near the head it is always black. In a specimen 61 inches long, and 2¼ inches in circumference, the head was 1¼ inches, the body 44 inches, and the tail 16 inches; the abdominal plates were 203, and the sub-caudal scales 109 pairs. They sometimes attain the length of 7 feet. It moves with great swiftness, and feeds on young birds and small animals; though inoffensive to man, it defends itself bravely, twining its long folds around its enemy. This species is rare, and appears to be confined to South Carolina, Georgia, and Florida. In its general form, in the scales, and in the plates on the head, it somewhat resembles the black snake. It receives its popular name, not from the small size of the body and tail, but from the imbricated disposition of the caudal scales.

COAHOMA, a N. W. co. of Miss., separated from Ark. by the Mississippi river; area 750 sq. m.; pop. in 1850, 2,780, of whom 1,391 were slaves. The surface is low and level, and the western part is frequently inundated by the Mississippi. The Sunflower river flows through it. The soil is generally good. Productions in 1850, 2,430 bales of cotton, 134,815 bushels of corn, and 22,837 of sweet potatoes. There were 5 churches, and 97 pupils attending public schools. This county forms part of the territory ceded by the Chickasaws, and was organized in 1836. Capital, Delta.

COAHUILA, or COHAHUILA, a state of Mexico, pop. 66,228, bounded N. by Texas, from which it is separated by the Rio Grande, E. by Texas and Nuevo Leon, S. by Zacatecas, and W. by Chihuahua and Durango. A large portion of its area, which is 54,106 sq. m., is occupied by the Bolson de Mapimi, a district inhabited chiefly by the Comanche and Lipan Indians, where they congregate during the winter. A range of mountains separates it from Chihuahua, and another from Nuevo Leon. Indeed, it is encompassed by mountains on all sides except the N., thus forming a sack; hence the name of Bolson, a sack, or sack of Mapimi. Detached ranges intersect it in other parts. A larger portion of its area consists of desert, woodless plains without water; yet there is a considerable extent of grazing lands, well adapted for rearing cattle; but the continued presence of large hordes of hostile Indians, who do not cultivate the soil, but live wholly on plunder, has greatly diminished the stocks of cattle and horses, and put a complete check upon the business of stock raising. Silver mines are known to exist here, but few are worked in consequence of the proximity of the Comanches to them. Among its other mineral resources are saltpetre, copperas, alum, lead, tin, and copper. There are several rivers, as the Nasas and Sabinas, all of which are small. In the Bolson de Mapimi are the lakes Cayman and Parras. There are some very large landholders in this state; one of them, Don Jacobo Sanchez, is reputed to be the owner of one half its landed estates, one of these estates being more than 100 m. in length. But with this vast property the owners are comparatively poor, being unable to take care of it. Many valuable haciendas and entire villages have been abandoned and subsequently destroyed by the Comanches, an evil which is increasing every year. Parras, one of the chief towns in the state, is a very old place, famous for its vineyards and wine, the latter of which is sent to all parts of the country. Brandy is also made here. The arable land covered with vineyards is irrigated from the numerous springs in the hills near by. Wheat, maize, and barley are the chief cereals of the state. The maguey (*agave Americana*) grows in perfection in the southern part of the state, where it is cultivated in large plantations. The yuca, too, which is found throughout Mexico, here attains a diameter of 3 or 4 feet, and a height of from 25 to 30 feet. The capital of the state is Saltillo or Leona Vicario. Six m. distant is the village of Buena Vista, near which is the famous battle-field where the American army under Gen. Taylor defeated the Mexicans in 1847.

COAL,* a term now commonly applied to the different varieties of mineral fuel, formerly to the burning coals of the fire and to the charcoal remaining after their extinction. By the English it is generally used in the plural number, and always conveys the meaning of bituminous coal, which is the common variety in use. In this country it is as applicable to the other division, the anthracite, with which the inhabitants of the Atlantic states are most familiar. This variety of coal has already been described, and to the article ANTHRACITE the reader is referred for data relating to the origin of coal, and the differences in the chemical composition of anthracite and bituminous coal. One variety passes into the other; and the pure anthracite is the result of bituminous coal thoroughly deprived of its volatile gases. Brown coal is a variety but partially mineralized, retaining the structure of the original wood, and found in geological formations of much more recent date than the true coal formation. (See BROWN COAL.) The use of coal by the English is traced back many centuries. Historical mention is made of the trade of Newcastle in this material in the year 1281. Its use in London was prohibited in the reign of Edward I., the smoke being then regarded as injurious to health. But though by several acts of parliament its employment continued to be prohibited, the mineral fuel, as wood became scarce, found its way as a substitute; and from the time of Charles I. it has been the common fuel, not only of London, but of the greater portion of the island. The steam engine immensely multiplied the demand for it; it was found useful in various mechanical and metallurgical arts, some of which owe their importance wholly to this new source of power, as it may well be called. Its application to the production of gas for illumination further increased the demand; as at a later period has also its newly discovered capacity of producing valuable oils and other highly combustible compounds. The consumption in Great Britain increased to such an extent, that the coal mines became an essential and principal element in the prosperity of the kingdom. In no other country was the production to be compared with that of its mines; and nowhere did manufactures and commercial prosperity, dependent upon the use of steam on the land and on the sea, so rapidly increase. In 1854 it was estimated that the quantity of coal of all kinds mined in the united kingdom was no less than 64,661,401 tons. The export was usually computed at about $\frac{1}{16}$ of the whole amount raised. The capital invested in the mines is supposed to be full $50,000,000, and the value of the annual product at the mouth of the pits $75,000,000. In 1856 the transportation of coal, culm, and cinders in the coasting trade amounted to 9,110,076 tons, and the export to the colonies and foreign countries to 5,879,779 tons. The following table of the exports of coals and culm in the 8 months ending Aug. 31, 1857, and Aug. 31, 1858, exhibits the various directions in which this trade is distributed, and the curious fact that to nearly all maritime countries, most of which produce also the same article, this cheap and homely product, which a century ago was hardly known in commerce, is now extensively transported from the British islands. Ocean steamers upon all seas depend mainly upon supplies of British coals:

	1857—tons.	[illegible]
Russia	[illegible]	[illegible]
Denmark	334,508	[illegible]
Prussia	258,017	[illegible]
Hanse towns	345,401	[illegible]
France	856,729	[illegible]
Spain and Canary islands	300,508	[illegible]
Turkey	140,877	[illegible]
United States	108,917	[illegible]
Malta	75,861	[illegible]
British West Indies	67,225	[illegible]
Other countries	1,615,584	[illegible]
Total in 8 months	4,461,730	[illegible]

value of the exports of British
l culm was in

1851.........	£1,302,478
1852.........	1,372,114
1853.........	1,604,591
1854.........	3,127,156
1855.........	2,446,341
1856.........	2,826,582
1857.........	3,200,551
1858, 8 months	2,125,587

t to Great Britain among the
in the production of coal. As
BELGIUM, this amounted in
ons, worth $20,000,000. The
coal district compared with
computed by R. Valpy, in a
ues and Mining Industry of
or 335,000 acres; that of Great
or 2,930,000 acres; and that
or 680,000 acres. The number
peration in 1838 was estimated
ying 37,171 persons. The for-
(chiefly to France) were 2,974,-
355, and 2,865,154 tons in 1856.
f coal into France in 1856 were
ut $12,000,000. In Aug. 1856,
were 89,850 tons; in the same
143,500 tons, and 1858, 120,450
ited States imported in the year
30. 1857, 237,377 tons of coal,
l and the British provinces,
The exports of American
riod were 129,420 tons, valued
a trifling quantity of foreign
xico and China.—The bitumi-
ave their distinctive character
e called bitumen, which causes
with a bright flame, and emit a
nd tarry odor. Combustible va-
ved by subjecting them to heat;
tion, the vapors are made to fur-
used for illuminating purposes.
livide the coals into several va-
of which are recognized in this
others are only of local interest.
ly contain from 15 to 66 per cent.
tter, from 20 to 75 per cent. of
nd from less than 1 to more than
f ash. In the United States the
ass are commonly known as semi-
cluding those which, in their large
carbon and small amount of vol-
pproach most nearly to the an-
tuminous, and as cannel, the last
nly in mechanical structure. As
roperties of the coals come to be
od, varieties will no doubt be rec-
no difference is now suspected
it has recently been found that
two neighboring beds, not appa-
n character, are fitted, the one
ion of the liquid coal oil, and the
spermaceti-like substance paraf-
als that tend in the fire to swell,
er into a solid mass, are
as pitch, caking, or coking
e slowly, in consequence of
usion of the air through them,
and hence are used to better advantage when coked. They are well adapted also for producing gas. Some coals equally rich in volatile matter have not this property of caking together, and are called dry coals. Cherry coal is one of these; it is more crumbly than the pitch coals, and wastes much in mining by falling to fine coal. Culm is a very dry coal of Kilkenny and Glamorganshire; it is the "steam coal" of South Wales, and corresponds to the semi-bituminous coal of Maryland. Splint coal of Scotland is an impure cannel. Sometimes the different varieties of coal are observed in alternating layers in hand specimens, or forming different strata in the same bed. Cannel is a dry, highly bituminous coal, of very close texture, and but little lustre. It is obtained in clear rectangular blocks of smooth and perfectly clear surface, which break with a large conchoidal fracture. It is remarkable for the readiness with which it kindles, being lighted at once in the flame of a lamp, and continuing to burn with a clear yellow flame without melting and running down. This property renders it very well adapted for illuminating purposes, and has given to it the name of cannel, which is the pronunciation of the word candle in Lancashire, where the name was first applied. In Scotland, it is said that it has long been the custom for farmers to lay in a stock of this coal to be used as a substitute for candles. It is also extensively used for producing gas. Its close texture and susceptibility of receiving a fine polish have caused it to be manufactured into snuff boxes and similar articles. This variety is found in western Pennsylvania, in Virginia, Ohio, Kentucky, and Missouri, sometimes in beds of considerable size, and oftener forming layers in the beds of the common bituminous coal. The black slate, which forms a considerable part of the coal measures, is frequently charged with a large percentage of carbonaceous matter, and then assumes the appearance of cannel coal, so as to be mistaken for it. The slate, however, has a greater specific gravity, and will not burn freely like the coal. By reference to the table below it is seen that the cannel coals differ from the other varieties by yielding a much larger amount of volatile matter, and generally a larger quantity of ash. The English varieties also usually contain more sulphur than the other coals; this ingredient, present in the form of iron pyrites or bisulphuret of iron, rarely, however, amounts to more than 1 per cent. The volatile matter from the cannel coals is not only very abundant, but it is usually of a superior quality for illuminating purposes; for it is not by any means the case that the coal producing the most gas is the most valuable for furnishing this product, as will be hereafter explained. The passage of the varieties of coal into each other often renders their exact designation impossible; and so when by increase of earthy matter coals pass into shales, there are stages of transition in which the substance may be indifferently called by one or the other name. In 1853 an

important case was tried in Edinburgh, which turned on this question, involving the right to mine the valuable Boghead or Torbanehill beds, which were leased as coal. The most eminent authorities, in their testimony as witnesses, differed in their estimation of the correct designation of the substance. Dr. Penny had pronounced it coal, when he determined in 1849 its valuable qualities for producing gas. Prof. Graham and other scientific men agreed with him. Hugh Miller called it a very inflammable shale; Prof. Chapman a bituminous shale; Prof. Anderson said, whatever it was, it was not a bituminous shale; Dr. Wilson called it a clay impregnated with bitumen; Prof. Brande said it was a new peculiar mineral; Prof. Ansted gave it no name. Three microscopists testified that it exhibited no trace of organic structure; and 4 others, 3 of whom were botanists, affirmed that in every part of it there was the clearest evidence of vegetable structure. Its physical and chemical characters appeared to identify it with other varieties of cannel coal, and in its mode of occurrence in the strata its beds differed in no respect from those of this coal. Fossil plants abounded in the beds, especially *stigmaria* with numerous rootlets. The verdict was in accordance with the evidence presented by these analogies, and the substance was pronounced coal by the jury. A few of the analyses of this coal by Dr. Penny are presented in the following table. A similar lawsuit which took place in the province of New Brunswick, in which the question involved was whether the substance was coal or asphaltum, has been noticed in the article BITUMEN. The beds, worked at Hillsboro', Albert co., N. B., were determined to be of coal, from the fact of the material displaying the vegetable tissue, when thin polished plates of it were examined through the microscope; from its behavior with various chemical reagents being that of coal and not of asphaltum; from its not liquefying as the bitumens do at a temperature below 220° F., nor being decomposed at that of melted lead. The specific gravity of this coal, as stated by Dr. A. A. Hayes, varied with different specimens from 1.0836 to 1.1113, being lower than is met with in other bituminous coals, their proportional weight to pure water at 60° F. rarely falling below 1.26, which is the density of some varieties of Newcastle coal. The Breckenridge coal of Kentucky is of density varying from 1.14 to 1.16.—The following analyses of several varieties of bituminous coal are found in different works which treat upon this subject, giving the proportions of the ingredients in 100 parts. They can be regarded as furnishing only approximate results, for the quantity of volatile matter obtained varies with the mode of applying the heat employed to expel them; hence the propriety of the remark above made, that the proportion of the gaseous products found is not a true index of the relative fitness of coals for illuminating purposes; moreover, all the volatile matters not being combustible, an unknown portion of them gives no addition to the illuminating capacity of the coal:

Locality.	Sp. grav.	Volatile matter	Fixed carbon.	Ash.
1. Atkinson & Templeman's, Md., av. of 2 species...	1.313	15.38	74.[illegible]	[illegible]
2. Blossburg coal run, Penn.	1.371	14.40	73.[illegible]	[illegible]
3. Queen's run, Penn., av. of 40 species..........	1.331	16.81	73.46	[illegible]
4. Maryland semi-bitumin's.	1.250	15.80	73.61	[illegible]
5. Newcastle upon Tyne...	1.256	31.50	67.65	[illegible]
6. " " " ...	1.270	35.30	60.50	[illegible]
7. Pittsburg, Penn..........	....	32.95	64.72	[illegible]
8. Cannelton, Indiana......	1.273	36.50	50.47	[illegible]
9. Black Heath, James r., Va.	...	32.57	58.79	[illegible]
10. Liverpool coal	1.260	40.48	54.90	[illegible]
11. Monroe co., S. Illinois...	1.246	36.20	58.70	[illegible]
12. La Salle co., N. Illinois, lower bed............	1.237	39.90	55.10	[illegible]
13. Albert coal, N. Br'nswick.	1.129	61.74	36.24	[illegible]
14. Boghead, cannel (Scotch).	....	66.25	30.[illegible]	[illegible]
15. Grayson, Ky., "jet can'l".	....	61.95	30.07	[illegible]
16. " " cannel....	1.371	62.[illegible]	14.86	[illegible]
17. Breckenridge, Ky., can'l.	1.150	64.20	27.16	[illegible]
18. Torbane hill, cannel.....	1.190	67.11	10.52	[illegible]
19. Boghead, black cannel..	1.216	62.70	9.25	[illegible]
20. Boghead, brown " ..	1.160	71.06	7.10	[illegible]
21. Hardie's (Scotch cannel).	1.420	58.7	4.90	[illegible]

Of the above analyses, Nos. 1–4 are by W. R. Johnson; 5, by Karsten; 6, by Dufrenoy and Berthier; 7, by B. Silliman, jr.; 8–10, by W. R. Johnson; 11, 12, by J. G. Norwood; 13–17, by B. Silliman, jr.; 18–21, by Dr. Penny.—The production of bituminous coal from wood is thus explained by Liebig: The decay of vegetable fibre is a slow combustion or oxidation. The hydrogen in the composition of woody matter most readily unites with oxygen, and passes off in the form of water; a less proportion of carbon escapes at the same time in the form of carbonic acid gas. Thus oak wood, of composition $C_{36} H_{22} O_{22}$, yields a humus, $C_{34} H_{16} O_{16}$; and another specimen, $C_{34} H_{15} O_{14}$, the relative proportion of carbon increasing as the decomposition goes on. Wood decaying under water, where it is protected from the action of the air, undergoes a different change. The white mould then produced from oak wood consisted of $C_{33} H_{27} O_{24}$, probably obtained by the removal of 3 atoms of carbonic acid gas$=3CO_2$, and the addition of 5 atoms of water and 3 of oxygen $=5HO+O_3$. Beech wood produced a mould of $C_{33} H_{25} O_{24}$, which was probably obtained in a similar way. Brown or wood coal appears to be the product of such a decay, the composition of a pure specimen proving to be $C_{33} H_{21} O_{16}$, which is that of oak wood less one atom of hydrogen and 3 atoms of carbonic acid. Such changes are constantly taking place in great collections of vegetable matters. The oxygen in the original composition of these gradually disappears, and carbonic acid gas is evolved; it forms the choke-damp in coal mines, and is supposed to give rise to the acidulated properties of the springs that issue near the great beds of brown coal. Exposure to the atmosphere lessens the proportion of hydrogen, and consequently those portions of coal beds remote from the surface are found to contain more volatile matter than those near their outcrop. These changes, long continued, produce the different

of mineral coal. The composition of
d cannel coal is $C_{24}H_{13}O$. Oak wood
oduce this result by the loss of 3 atoms
rater and carburetted hydrogen and 9
ic acid; thus:

....		$C_{36}H_{22}O_{22}$
rater	H_3O_3	
arburetted hydrogen.	C_3H_6	
arbonic acid.........	$C_9\quad O_{18}$	
		$C_{12}H_9\ O_{21}$
nnel coal.......................		$C_{24}H_{13}O$

rther removal of olefiant gas, C_4H_4, the
uld be of the composition of caking
O. The carburetted hydrogen with a
portion of olefiant gas is the fire-damp
ive gas of the bituminous coal mines.
nce in these indicates that such changes
on as are represented above; but in
of brown coal the process is not so
d, and carbonic acid gas only is gen-
ch are Liebig's explanations of this
bituminization, omitting some of the
s by which the alkaline phos-
onates are removed, and numer-
s are produced. Prof. Göppert finds
table matters kept several months in
ter are converted into brown coal;
phate of iron, a product of every coal
esent, the brown coal acquires a totally
like condition. He infers that the
the coal beds was tranquilly depos-
a large part accumulated after the
f peat. The observations of Dr. New-
Ohio, upon the coal mines of our
ntry, corroborate the views of Liebig.
e outcrop of the coal beds along
ides, he finds a progressive change
e both in the chemical and physical
s of the coal to the point where atmo-
nfluence ceases. Near the surface the
able and lustreless, and becomes harder
brilliant within. Near the surface, too,
ly destitute of gases, the proportion of
matter increasing as the coal improves
rance. But in situations where the out-
beneath the water level, the coal is
d light, containing nearly its normal
of volatile ingredients. To submersion
me of deposition he ascribes the high
ing power of cannel coal, and also its
lly more mixed with earthy matter,
ing, as he finds it sometimes does,
s. It has the foliated structure of
posited by water, and by increasing
ture of earthy matter with the vege-
it passes into bituminous shale. The
of thin alternating layers of cannel
he beds of ordinary bituminous coal is
d to the variable depth of water cover-
coal marshes, the cannel-like layers
posited in the form of a macerated and
l vegetable tissue during the preva-
the higher waters. A remarkable in-
f a coal bed being charged with com-
gas is given in the evidence of Rich-
ith Esq., before the parliamentary
committee appointed to report upon accidents in mines. He states that when one of the Nova Scotia coal beds was opened at the depth of 180 feet, the water pent up within the bed rushed out with violence. "The whole mine appeared to be thrown into a state of regular mineral fermentation. The gas roared as the miner struck the coal with his pick; it would often go off like the report of a pistol, and at times I have seen it burst pieces of coal off the solid wall." Though no particular exhibition of gas was seen at the surface before the coal was reached in the shaft, the river over its line of outcrop was then suddenly thrown into a violent state of ebullition, and the gas could be inflamed upon the surface of the water. It also collected in holes dug in the river bank, and being fired would continue to burn for months unless extinguished.—In the destructive distillation of coal, its elements combine among themselves to form a variety of useful products, differing according to the temperatures employed, and the presence or absence of other substances, as water, &c. Among these products, beside the carbonaceous residue called coke and the coal gas used for illuminating purposes, may be named coal tar, naphtha, naphthaline, paraffine, benzole, coal oil (called by Dr. Lyon Playfair "liquefied coal gas"), and several other compounds. (See Coke, Coal Products, Gas.) The bituminous coals, by reason of their greater diversity of composition, are thus seen to be adapted to numerous uses for which the more simply composed anthracite is altogether unfitted. Nor do the former always fall behind the latter in their useful calorific properties; for though as a general principle these are increased with the relative proportion of carbon present, the requirements in the consumption of fuel are often better met with a free-burning coal, that rapidly disseminates the caloric evolved wherever its flame reaches, than with the more compact and flameless fuels, that slowly consume, and give out their heat only to bodies in close proximity. (See Fuel.) Hence it is that some coals prove to be better adapted as fuel for one purpose in the arts and manufactures, and others for other purposes; and those coals, like the semi-bituminous varieties of the Cumberland basin in Maryland, which in their large percentage of carbon approach most nearly to the anthracites, are most highly valued in practice for steam purposes, generating, according to the experiments of Prof. Johnson, even somewhat more steam than these, and being less detrimental to the boilers, diffusing the heat along their length, instead of concentrating it immediately over the fire grate. The fires also are more readily kindled and managed than those of the more compact fuels. For these reasons the semi-bituminous coals have found a large demand on board of sea-going steamers, as those of the Cunard line, on many of the ferry boats which ply in New York harbor, and in the locomotives of many of the railroads. In France a similar semi-anthracite from Belgium is employed in

some of the locomotives, and in others coke. Upon the English roads this debituminized and concentrated fuel has been heretofore used to the exclusion of raw coal, for the sake as well of its freedom from smoke, as of its supposed greater calorific power. Recently, however, locomotives have been introduced on the London and Southwestern railway, and some other of the English roads, constructed especially with reference to the burning of the ordinary bituminous coals of the country, and their operation is favorably reported upon by Messrs. Z. Colburn and A. L. Holley, in their work entitled "Permanent Way and Coal-burning Locomotive Boilers of European Railways" (New York, 1858). These gentlemen report, that in various plans of engines, so far as anthracite has been compared with bituminous coal, the former evaporates about 20 per cent. less water than the latter for equal weights of fuel. According to the experiments of Prof. Johnson,* as quoted in the note, and as appears from the numerous tables in his work upon American coals, the ordinary bituminous coals, in their capacity of generating steam, fall far below those approaching the anthracites in their composition. A report of the superintendent of the Hudson river railroad, Nov. 8, 1858, presents the results of the introduction of the semi-bituminous coal of Maryland in some of the engines running between New York and Poughkeepsie. A prominent feature in the construction of the engines is a long combustion chamber projected into the barrel of the boiler. The price of wood being $6 per cord, and of coal $4 80 per ton, the economy in favor of the coal was found on passenger trains to be 65 per cent., and on freight trains 71 per cent. The annual report of the Baltimore and Ohio railroad of the same date presents similar results of experiments with different fuels made upon that road. The expense per mile of a train of 5 cars with wood for fuel was found to be ¾ of a cent; with coke ⅝; and with coal ½ cent. Fourteen of the passenger train engines are consuming mineral fuel, and the alteration of others is recommended. —The mode of occurrence of the coal beds has been already described in the article ANTHRACITE. They are met with in a series of alternating beds of slates or shales, sandstones, fire clay, and limestone, the coal beds lying as distinct strata among the others, usually resting upon a bed of fire clay, and covered with a stratum of black shale. The beds of coal, like those of the other materials, are of various thicknesses. In a single hill several beds may often be seen, or a number may be cut by sinking a shaft through the different strata below the surface. Some may be only a few inches thick, and others many feet or yards. They may be traced, varying little in their characters, over large areas, the same bed sometimes being recognized over many counties, or even in different states. This group of strata, of which the coal beds form an important member, constitute a distinct geological formation, which in both hemispheres occupies the same relative position in the long series of stratified rocks, and is identified by similar families of fossil plants. These are found in the sandstones, shales, fire clay, and in the coal itself. The formation is called the coal formation or the coal measures, and the epoch during which the strata were collected is known as the carboniferous era. In the remote history of the globe it appears to have been the first period in which the full development of the vegetable kingdom took place. Rock formations had accumulated in vast piles of strata through long periods; but the numerous fossil remains preserved in them of testaceous animals, fishes, and marine plants, bear witness that the waters continued to cover the earth, and the portions that may have been above them were not yet the theatre of such a development of organic life as was to succeed. As the epoch of land vegetation approached, a few districts of very limited area appear to have presented their surface above the waters in a condition to first develop this new vegetable growth, and receive a covering of its carbonaceous materials; but the waters again overflowed them, the strata of the mountain limestone formation with its numerous shells were slowly deposited over the premature coal formation, and the coarse sands and pebbles of the millstone grit were swept in, burying the calcareous strata and associated shales beneath their accumulations, and constituting in both hemispheres the floor of the true coal formation. Upon this were

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* In table ccl. (p. 596) of Prof. W. R. Johnson's "Report of Experiments on the Evaporative Power and other Properties of Coal," it appears that the highest number of pounds of steam from 212° produced by one cubic foot of coal in any one experiment, was 581.8, the coal being the Peach mountain anthracite; the second number was 577.5, the coal being the Forest Improvement, also anthracite; the third was with Atkinson and Templeman's semi-bituminous coal, 573.8, and the fourth with Beaver Meadow (slope No. 5) anthracite, 572.9 lbs.; but in the table (p. 594) giving the average results of evaporation under equal bulks, the order given is as follows:

	Pounds of Steam.
Atkinson and Templeman's, S. B	566.2
Beaver Meadow (slope No. 5), A	556.1
Peach Mountain, A	545.7
Forest Improvement, A	540.8
Eastby's "coal in store," S. B	535.6
Pictou (Nova Scotia), B	450.6
Midlothian, eastern Va., average, B	448.5
Newcastle, B	439.6
Pittsburg, B	384.1
Sydney, B	378.9
Liverpool, B	375.4
Cannelton, Indiana, B	348.3

The letters S. B., A., and B. designate respectively the semi-bituminous, anthracite, and bituminous varieties. The first 5 are the first in the full table, from the subsequent part of which the others are selected. Of this table Prof. Johnson remarks that it is the most important for the purposes of steam navigation, as the names of the coals stand in the order of their evaporative power under given bulks. On p. 593 is the following summary: "It will not fail to be remarked, that the justly celebrated foreign bituminous coals of Newcastle, Liverpool, Scotland, Picton, and Sydney—coals which constitute (1844) the present reliance of the great lines of Atlantic steamers—are fully equalled or rather surpassed in strength by the analogous coals of eastern Virginia; that they are decidedly surpassed by all the free-burning coals of Maryland and Pennsylvania; and that an equally decided advantage in steam-generating power is enjoyed by the anthracites over the foreign coals tried, whether we consider them under equal weights or equal bulks."

d over areas of vast extent the strata named, the surface no doubt slowly and rly subsiding as the strata were accu- L. By a comparatively rapid rate of ice the coarser materials, now constihe sandstones, were swept over these By gentler currents the mud, now pren the form of the shales, was distributed, beds of fire clay collected, near the level rater surface, in the same manner as clay formed. The clay appears to have served, t beneath the great peat bogs of the pres-, as the soil for the growth of a luxuriant ion. In it are preserved strange vegessils called *stigmariæ*, which are now ood to be the roots of a tree called the ia, of which the large fossil stems are the coal beds, and appear to have furs considerable proportion of its material. ous instances are cited in geological f these trunks being found in various s in the strata, converted into sandr into coal, but retaining the markings bark and of the divisional joints of the Stumps have been found in south Stafe, to the number of 73, in rock covering e than a quarter of an acre of surface. f these were more than 8 feet in circum-. The roots were attached to them, se formed part of a bed of coal 10 inchk. The trunks, broken off near the y spread about in every direction, flato the thickness of 1 or 2 inches and ed into coal; one was found 30 feet other 15, and others less. A most ing locality is described by Sir Charles t the cliffs called the South Joggins, in of Fundy, Nova Scotia. These cliffs, 00 feet in height, are composed of the sandstones, and clays of the coal measing inclined at an angle of 24° with the . In these strata, measuring in thickout 2,500 feet, Lyell counted 19 parales of coal, varying in thickness from 2 to 4 feet. From many of these coal ssil trunks were observed standing at gles to their plane, and extending into erincumbent strata. Their length was 6 to 8 feet, but one was noticed 25 feet d 4 feet in diameter. No trunk was ssing through a coal bed, however thin. ole thickness of the carboniferous formahis locality is estimated by Mr. Logan to ess than 14,570 feet; and in one portion 400 feet thick, Lyell states that he has vidence of root-bearing soils at 68 differls. The plants belong to the same genl most of them to the same species, as et with in the distant coal fields of Eu-The most common forms are those of the æ with their stigmaria roots. Calamites, nd coniferæ are less frequent. In the mation of Germany the same families of are found, and by close examination of l itself, as stated by Prof. Göppert, their re may be detected, more particularly that of the stigmaria, throughout the body of the coal. From such data as these, greatly multiplied and varied among the numerous known coal fields, the evidence is very conclusive that the coal beds have been for the most part produced from the luxuriant growth of forests upon the spots where the accumulations resulting from their destruction are now found; and that, the surface continuing at intervals to subside, a new soil and new forests have repeatedly been formed over the buried remains of those that preceded. The plants are of a nature requiring a very moist atmosphere. In localities like those of the Great Dismal swamp and of the vast peat bogs, are now to be seen the conditions most nearly approaching those in which the materials of one of the ancient coal beds were collected. Some beds may have been produced in the manner of the great collections of drift-wood seen in the enormous so-called rafts which obstruct some of the western rivers, covering areas of many square miles; but the conditions under which the vegetable remains are found are for the most part unfavorable to the supposition of their removal from the places of their growth.—The occurrence of the same great formations in the same order both in Europe and the United States indicates the existence of one great hydrographical basin spreading over both continents, and deriving the materials of their rocky strata from the same sources; as in recent periods the strata gathered at the bottom of the Pacific ocean must maintain over areas equally vast great uniformity of composition. There is strong proof that the materials constituting the coarser sandstone beds of the coal measures of Pennsylvania were transported from an easterly direction, and hence that there were elevated lands at that period in portions of what is now the Atlantic ocean; a country which may perhaps have furnished to the corresponding formations of Europe the materials of their strata.—A remarkable feature of the coal beds is the very great extent of country covered by a single layer. In the great coal field of the United States stretching west of the Alleghany mountains, one bed larger than the rest is recognized from Cumberland, Md., in the east, to Wheeling on the Ohio, a breadth of 150 miles, and also at points equally distant in a north and south direction. "If it can be identified in the anthracite basins also, which," as Mr. Lesley in his "Manual of Coal and its Topography" states, "we have every thing but an absolute demonstration for believing, its outspread will be doubled. Taking into account the immense area over which it must originally have stretched to include these scattered points, an area little short of 200,000 sq. m., it presents itself as one of the most remarkable and significant facts of science, a starting point for many theoretical speculations, and practically a sure horizon of observation, from which to measure and identify the rocks above and below it. It has been made in fact the base line of our carboniferous geology.

Its size, constitution, quality, and accompaniments are all unmistakable." It is everywhere a double bed, yielding 5 to 10 feet of rich, solid, pure bituminous coal, with 2 or 3 feet of bony coal above. The sections of the strata collected by the state geologists of Pennsylvania and the adjoining states afford the means of tracing out and identifying many other coal beds, which retain their relative positions in the series over large districts. These are scattered at irregular intervals through a total thickness of between 1½ and 2 miles of parallel beds of shales, sandstones, and limestones. The workable beds in the most productive portion of the anthracite region—the middle part of the southern basin—do not exceed, according to Prof. H. D. Rogers, about 25 in number; and those of all dimensions do not amount to more than from 30 to 35 separate layers. In the great bituminous coal field, the other side of the mountains, according to the same authority, not more than half as many workable beds are found, and including the small beds there are not more than 18 or 20 in all. In Ohio the same coal field is found still less productive in coal, only 7 workable beds being found and 10 unimportant ones. In the coal basin of Indiana and Illinois there are but 6 workable beds; in that of Missouri and Iowa only 3 or 4 are known. The aggregate thickness of the coal measures also diminishes as they are traced westward. These considerations should lead us not to place an undue estimate upon the value of our coal fields from the amount of surface covered by some of the strata of the coal measures; and they show us in what estimation to hold the maps drawn in squares of sizes proportionate to the coal areas of different countries, as representing the comparative quantities of coal they contain. Approaching the margins of our great western coal basins from their central portions, lower strata continue to appear and occupy the surface, and a very shallow thickness of strata, containing, it may be, not more than one workable coal bed, may spread out over the conglomerate and cover many square miles, all which in such maps would be represented as coal area equal in importance to those districts of the anthracite region in which numerous workable beds are found in close proximity, and in which all by the steepness of their dip are brought in succession to the surface and made conveniently accessible for mining. In the interior of Michigan is a large territory, variously estimated as extending over from 5,000 to 11,000 sq. m., covered with an extremely shallow thickness of coal measures, not more than 50 feet in all; and in this there are not more than 2 workable coal beds, the best not more than 4 feet thick. These beds probably are not found in a workable condition over more than half the coal field. But taking the estimate of Mr. R. C. Taylor, in his "Statistics of Coal," of 3,000,000 acres as the coal area, and allowing 6 feet of workable coal to be found over this (which is probably much more than really exists), there is in the whole of this great coal field only about ⅓ as much coal as is found in an area of only ⅛ the extent, the Lancashire coal field of England, which, spreading over 380,000 acres, furnishes in 75 workable beds 150 feet of coal. Again, the Dudley and Wolverhampton coal field, of only 65,000 acres (about $\frac{1}{46}$ the area of the Michigan coal field), contains 11 beds, the aggregate thickness of which is 67 feet, equalling in all about ¼ the production of the 3,000,000 acres of Michigan.—The great bituminous coal field of the United States, called the Appalachian, commences near the northern line of Pennsylvania; and in this portion of the state, in Bradford, Lycoming, and Tioga counties, it is represented by several isolated basins, separated from each other by the conglomerate or still lower strata forming the summits. Toward the south, bounded on the east by the main Alleghany ridge, the coal measures spread over the surface, including the whole central and south-western part of the state, the south-western part of Ohio, the eastern parts of Kentucky and Tennessee, and the western portions of Virginia. The formation terminates in northern Alabama, but appears again as far south as Tuscaloosa. Including the outlying anthracite basins further to the east, the whole area has been estimated at 65,000 sq. m. Another coal field of almost equal extent occupies the greater part of Illinois, the western portion of Indiana, and a small district in the north-western part of Kentucky. It is separated by only a narrow tract, occupied by lower strata, from the great coal field of southern Iowa and northern Missouri. The formation is divided in the middle states by Mr. Leo Lesquereux of Pennsylvania, who has thoroughly investigated the fossil botany of the coal measures of North America, into 2 groups, the upper and lower; the so-called Gates and Salem anthracite bed, near Pottsville, and the Pomeroy bituminous bed in Ohio, which is on the same geological horizon, being the lowest stratum of the upper group. In the anthracite region the lower division furnishes the white ash, and the upper the gray and red ash. In Missouri, Prof. G. C. Swallow makes 3 divisions of the series, the details of which, somewhat condensed, are presented below, as a good illustration of the nature of the strata which make up the coal formation, of the fossils they include, and of the small space among them occupied by the coal in the western states. The whole thickness amounts to about 650 feet, the upper division being 300 feet, the middle 200, and the lower 150; these figures, however, are approximate only, as the thickness varies in different localities. The first column of figures marks the number of the beds in descending order; the second the thickness of each in feet:

UPPER COAL SERIES.

1. 10 ft. of limestone. *Fossils: Fusulina cylindrica, Productus, costatus, P. æquicostatus, Orthis umbraculum.*
2. 3 ft. of yellow and blue shale.
3. 3 ft. of bituminous shale.
4. 3 ft. of limestone. *Fossils: Terebratula subtilita, Productus costatus.*

15 ft. of bituminous and blue shale.
20 ft. of limestone. *Fossils:* same as No. 1, with also *Spirifer Meusebachanus, S. lineatus, S. planoconvexa, Productus Wabashensis, Chonetes granulifera, Tereb. sub.*
12 ft. of shale.
7 ft. of friable sandstone.
4 ft. of limestone. *Fossils:* nearly as in No. 6.
20 ft. of shale.
5 ft. of sandstone.
16 ft. of calcareous and bituminous shales. *Fossils: Tereb. sub., Orthis umbraculum, Spirifer Kentuckiensis.*
Shaly sandstone.
15 ft. of limestone. *Fossils: Fus. cyl., Tereb. sub.* (abundant), *Orthis umbraculum, Sp. Kentuck., Productus punctatus, P. costatus.*
17 ft. of shale.
8 ft. of limestone.
20 ft. of shale.
10 ft. of limestome. *Fossils: Fus. cyl., Prod. cost., Tereb. sub., Campophyllum torquium.*
39 ft. of shale, with some sandstone and limestone.
20 ft. of limestone. *Fossils:* same as in No. 14, with also *Spir. lineatus, S. hemiplicatus, S. Meusebachanus, Prod. æquicost., P. Nebrascensis, Allorisma terminalis, A. regularis, Bellerophon hiulcus, Chætetes milleporaceus.*
5 ft. of shale.
Limestone, with *Fus. cyl.*
4 ft. of shale.
Thin layers of Coal occur in Nos. 7, 15, 24, 27.

Middle Coal Series.

5 ft. of ripple-marked sandstone.
39 ft. of shale with mud cracks.
11 ft. of shale.
¼ ft. of Coal.
6 ft. of blue clay. *Fossils: Fus. cyl., Tereb. subtil., Orthis um., Chon. granulif.*
10 ft. of sandstone.
6 ft. of shale.
4 ft. of limestone, the upper part shaly and full of *Fusulinæ, Chonetes, Producti, Crinoidea*; the lower hard and silicious, with huge lenticular masses of *Chætetes milleporaceus.*
23 ft. of clay and sandstone, with some limestone.
41. 4 ft. of limestone, contains *Ch. millepor.* and *Fus. cyl.*
42. 7 ft. of limestone. *Fossils: Orthis umbrac., Chonetes variolata, C. mesoloba, Tereb. subtil., Fus. cyl.*
43. 4 ft. of shale.
44. 5 ft. of limestone. *Fossils: Tereb. subtil., Sp. lineatus, Fus. cyl.*
46. 2 ft. of shale overlying 2 ft. of good Coal.
48. 2 ft. of shale over 6 ft. of limestone, containing *Fus. cyl.*
50. 24 ft. of shaly sandstone and shale.
52. 5 ft. of shale overlying ½ ft. of Coal.
53. 6 ft. of shale.
54. 4 ft. of limestone. *Fossils: Allorisma terminalis, A. regularis, Prod. cost., Sp. Meus., Bell. hiulcus.*
55. 1 ft. of clay.
56. 6 ft. of limestone.
57. 12 ft. of shale.
58. ½ ft. of Coal.
59. 4 ft. of shale.

Lower Coal Series.

60. 75 ft. of micaceous sandstone, the lower part abounding in vegetable remains, *Calamites, Sigillaria, Lepidodendra.*
61. 8 ft. of sandy shale; not persistent.
62. 1 ft. of Coal, sometimes failing. *Fossils:* in earthy concretions, *Leda arata, Goniatites planorbiformis,* &c.
63. 4 ft. of shale.
64. 6 ft. of Coal, varying from 3 to 6 feet, and in some places wanting.
65. 1 ft. of shale.
66. 8 ft. of hydraulic limestone. *Fossils: Chæt. millepor., Chon. mesoloba, Prod. splendens, Sp. lineatus, S. Meus., Fus. cyl., Tereb. subtil.*
67. 6 ft. of shale.
8-72. 17 ft., including 3 layers of Coal, ½ to 1½ ft. thick, alternating with shales.
3, 74. 5 ft. of shale overlying 3 ft. of Coal.
75. 23 ft. of shales and fire clay.

—The bituminous coal field of south-eastern Virginia, lying on both sides the James river, a few miles above Richmond, belongs to a more recent geological period than that of the true coal formation, and affords one of the few instances of valuable beds of coal being met with in other formations. In a depression of the granite, which until after the period of the trias or upper new red sandstone had received no covering of the sedimentary rocks, were collected, in the succeeding epoch of the lias, strata of sandstones and shales similar to those of the true coal measures; and with these were deposited beds of coal of unusual dimensions, the principal one next the granite attaining a thickness sometimes exceeding 40 feet. The coal plants, zamites, calamites, and equiseta, and the fossil fish preserved in these strata, unmistakably refer the formation to the lias; but the coal, though derived from a vegetable growth so different from that of the true coal formation, is not to be distinguished in chemical composition and appearance from that contained in some of the principal coal basins of the older period. It is never, however, of as good quality as the best of the older coals, being more mixed with slate and earthy impurities, more disposed to crumble and fall to fine coal, and is more generally injured by the presence of sulphur, so much so that it is liable to spontaneous combustion. It is largely used for steam purposes, and for the production of gas. Much of the fine coal might no doubt be profitably saved and converted into an excellent fuel by the process of Bessemer, described in the article Fuel. The area of this coal field is about 30 m. from N. to S., with an average width from E. to W. of 5 to 6 m. Its mines were probably the earliest worked of any in the United States; mention being made in the 1st volume of the "American Journal of Science" (1818) of their having been in operation 30 years previously. The workings are now carried on at greater depths than have been reached at any other mines in the country. The deepest shafts are sunk about 800 feet, terminating in the great bed of coal, the floor of which is the granite, with only a few inches of intervening slate, or sometimes of porphyry. The coal of some portions of this basin, near the contact with a dike of greenstone, is converted into coke. (See Coke, Natural.) At these mines have occurred the most serious explosions from fire-damp that have happened in this country. The first took place about the year 1817, without serious consequences. That of March, 1839, in one of Heath's pits, which was 700 feet deep, was the most disastrous of all, by which 53 miners out of 56 employed in the mine were killed. In 1841 and 1844, as well as in preceding years, there were explosions, all together resulting in the loss of many lives; and on May 15, 1854, 20 men were killed at the Chesterfield pits, which were 600 feet deep.—In North Carolina is also a bituminous coal field on Deep river, the place of which in the formations is probably near that of the Richmond basin. Little is yet known of its importance.—In the British provinces of New Brunswick, Nova Scotia, the islands of Cape Breton, Prince

Edward, and Newfoundland, the coal formation covers very extensive areas, which have been rated in all at about 18,000 sq. m. The greatest thickness of the coal formation anywhere measured upon this continent is found to be at the South Joggins cliffs in Nova Scotia. Mr. Logan has here made very exact measurements, the exposures furnishing remarkable facilities for them, and the sum total proves to be 14,571 feet less one inch, composed of 1,570 distinct strata, all of which are minutely described. The coal seams are 76 in number, but average less than 7 inches each in thickness. The largest furnishes only 3 feet 8 inches of coal; the next, 3 feet 6 inches. It is doubtful whether either of them, however, will ever be found worth working. The mines of Pictou and Albion, and the Sydney mines on Cape Breton, are of great extent, and produce large quantities of coal, much of which is exported to this country. At the Pictou mines, opposite the southern point of Prince Edward island, is a bed of coal 29 feet thick. Only about ⅓ of it (10 ft.?) is of the best quality of coal. It was worked in 1833 to the depth of 220 feet below the level of the sea. A railroad 6 miles in length connects the mines with the shipping port. The Albion mines are on the East river, about 8½ miles from the town of Pictou. Ten beds of coal are reported by Judge Haliburton to be found here, of the aggregate thickness of 60 feet. The main bed worked yields 24 feet in thickness of good coal, and 12 feet of a poorer quality. It produced in 1839 from 5,000 to 6,000 tons per month. One of the engine shafts was then 450 feet deep. Mention was made of the coal beds of Cape Breton by the abbé Raynal in his work on the West Indies. The principal mines are near Sydney in the eastern extremity of the island. Fourteen beds of coal are said to be found, averaging 3 feet in thickness; one is 11 feet, and another 9 feet thick; the principal one worked is 6 feet. The shafts are 250 feet deep. A railroad connects the mines with the landing, about 2 miles distant. The Bridgeport mines, 15 miles from Sydney, also produce large quantities of coal from a bed 9 feet thick. The excellent qualities and great abundance of the bituminous coal of these provinces, and the convenience of access to them by vessels, make them of great importance to this country. According to a statement of W. H. Shock, of the U. S. navy, the whole shipments from Pictou up to August 25, 1853, amounted to 526,911 tons. The Sydney mines are estimated to have produced 50,000 tons in 1844; and in 1849 the whole exportation from both provinces is stated to have been 35,527 chaldrons. The chaldron at the mines appears to be rated at 1½ tons, or 48 bushels of 3,750 lbs.; but of the coal when delivered in New York or Boston it is 36 bushels of 2,800 lbs. weight. At the latter rate, there were delivered in Boston in the year 1852, 40,754 chaldrons. The coal is preferred to the Richmond coal for its greater freedom from sulphur, and is much used in New England for generating steam for manufacturing purposes, and for gas.—The principal works exclusively upon the subject of coal are those to which reference has already been made. The "Statistics of Coal," by the late Richard C. Taylor, revised by S. S. Haldeman, is a summary of a vast amount of facts relating to the various coal-producing localities upon the American continent. "Coal and its Topography" is an interesting manual by J. P. Lesley of Philadelphia, describing the coal strata and the inferior formations of the Appalachian system, from the extended observations of the author, with particular reference to the characteristic outlines these formations impress upon the scenery of the middle states. The state geological reports are repositories of useful details upon the coal formation; as also are those of many of the geologists employed by companies engaged in exploring or working the mines. In the "American Journal of Science," and the "Journal of the Franklin Institute," special attention has been given to this subject from their earliest numbers. An important paper giving methods for determining the volatile ingredients, the coke, ash, sulphur, &c., of mineral coals, by means of the blowpipe alone, was furnished by E. J. Chapman to the "Canadian Journal," Toronto, for May, 1858. The English geological works and parliamentary reports abound with interesting matter relating to this subject, so essential to the prosperity of British industry. The cyclopædias and scientific dictionaries make their articles upon coal and collieries particularly prominent; but in none is the subject found treated with more ability and in a more interesting manner, or more carefully illustrated, than in Tomlinson's "Cyclopædia of Useful Arts." The chemical properties and products of coal are thoroughly treated in the 1st and 2d parts, entitled "Fuel and its Applications," of Dr. Knapp's work on "Chemical Technology," translated by Dr. Edmund Ronalds and Dr. Thomas Richardson.

COAL GAS. See GAS.

COAL PLANTS, traces and fossil remains of ancient vegetation found in the strata constituting the coal measures. To many of these reference has already been made in the article COAL. The occurrence of the huge stems of the calamites in the sandstones, the woody matter entirely removed, and its place filled by the stony material of the rock itself—only to be distinguished from it by the form of the plant being still preserved—these and the abundant sigillaria stems found in the coal, their roots proving to be the obscure stigmariæ with which the underlying fire clay is often filled, have already been noticed. So too the manner of occurrence of the larger stems or trunks standing in groups in many localities, as if they still occupied the places where they grew. But these, interesting and instructive as they are from the light they shed upon the nature and origin of the coal, are far inferior in number to the ferns, which form perhaps more than half the species of the carboniferous flora—[illegible] which amount, according to Adolphe [illegible]iart, to about 500 in number, of which [illegible] 250 are ferns. The abundance of these [illegible] lycopods, both of which crypto[illegible]ra belong to the group *acrogens* of [illegible]le., [illegible]led Brongniart to apply to this period [illegible] *le règne des acrogens.* The same divi[illegible] includes the genus *lepidodendron*, [illegible] species of which are found with the [illegible]hese are gigantic club mosses, the living [illegible]es of which in tropical climates are [illegible]s found 8 feet high. Their fossil re[illegible]t with in the coal shales have been [illegible] less than 49 feet long, and fragments [illegible] specimens indicated a still greater size. [illegible]s of the ferns also are remarkable [illegible] gigantic growth, a number of them [illegible]ferns, resembling those which now [illegible]n the islands of tropical oceans and of [illegible] temperate zone. In these islands, [illegible] south as 46° of south latitude in [illegible]d—in a climate not necessarily very [illegible]ut of equable temperature and very [illegible]—the arborescent ferns attain a height of [illegible] 50 feet, and with the coniferæ, which also [illegible] as fossils of the coal formation, consti[illegible]ortant portions of the flora of these [illegible] Many of the smaller fossil ferns bear [illegible]ng res[illegible]blance to those now living; and [illegible] l c[illegible]parison of the shape of the [illegible] of the veins of the [illegible] and [illegible] of their attachment to [illegible] which, in the want of more distin[illegible]g characters preserved in the fossil spe[illegible], are taken as the distinctive marks, it is [illegible] means certain that some of them should be referred to genera of living ferns. The [illegible] however, of all the ferns differ from the [illegible] The other families of the coal plants, [illegible]ing the coniferæ, are so totally unlike any [illegible] plants, that they cannot always be re[illegible] even to the class to which they belong. [illegible]rns, like the other coal plants, are found [illegible] coal itself, their forms being preserved, [illegible]h their delicate leaves are converted into [illegible]id black coal; and the preponderance of [illegible]ily in the flora of this period has led [illegible] naturalists to believe they may have fur[illegible]d a large portion of the coal beds. In the [illegible]les, particularly in those which make [illegible]tum overlying the coal beds, their im[illegible] are often wonderfully abundant, so that [illegible] coal beds are excavated, these slates [illegible]ed with a complete network of the [illegible] of fern leaves. It is apparent that [illegible] have formed a large portion of the [illegible]led mass of vegetable matters and fine sedi[illegible], which now constitute these beds of black [illegible]. As the thin mud in the course of ages [illegible]ly became indurated, the leaves decomposed, [illegible] their carbon was diffused through all the mass; but their forms, even to the most minute markings, were left as perfectly impressed as though they had been purposely taken in the finest clay, and left behind to harden. The preparations of recent plants for the herbarium of a naturalist could not be more beautiful than these naturally preserved relics of the most ancient vegetation. The delicacy of the specimens will not admit of the supposition that the plants could have been transported to any distance from the places of their growth. Wherever they are found thus perfect, they must have accumulated as the beds of vegetable matter now accumulate in the dense swamps of warm regions, the growth of each year slowly and silently adding to the increasing mass. The testimony of the fossil stumps and trunks is usually confirmatory of the same conclusion.—Next to the ferns, the coniferæ are the most abundant of the coal plants, and also the most similar to living forms. Five genera have been distinguished. Those of the European coal mines are allied to the araucarian division of pines more than to other living forms; but in Nova Scotia and New Holland, genera are met with of genuine pines. In a sandstone quarry in the Mid Lothian coal field, near Edinburgh, a trunk of an araucarian was uncovered from beneath 136 feet of strata, which measured 47 feet in length, flattened by the pressure, so that while its longer diameter was 5 feet, its shorter was 19 inches. The bark was converted into coal, but the woody texture of the interior was plainly to be seen. Some of the coniferæ were distinguished by a large pith, the fossil called *Sternbergia* having been proved to be the stony cast of the cavity left by it in the axis of the trunk. Some also bore, instead of cones, a fleshy fruit larger than hazel nuts, similar to the products of the Chinese genus *Salisburia*, one of the yew tribe or taxoid conifers. This fossil fruit, called *trigonocarpon*, is found so abundantly in some of the European coal measures that it may in some localities be collected by the bushel. It is met with in the shales, sandstones, coal, and ironstones. The coniferæ and cycadæ are included in Lindley's group of gymnogens—the dicotyledonous gymnosperms of Brongniart.—The calamites are very numerous, particularly in the sandstones. They are cylindrical jointed stems like those of reeds, and were formerly supposed to be gigantic equiseta of the group of acrogens. The conical termination of one end is now believed to be the lower end of a root. Brongniart is of the opinion that they cannot belong to the equiseta, nor to any tribe of the flowerless plants, but more probably they must be classed with the gymnospermous dicotyledons; though, as Prof. Williamson remarks, the arrangement of their tissues differs widely from that of all known forms of gymnosperms. By many naturalists both the calamites and lepidodendra are thought to have possessed the peculiarities both of the acrogenous and gymnogenous families; the great height attained by some of the species requiring a different tissue from that possessed by the ordinary unaspiring acrogens, if not one undistinguishable from that of the conifers.—The *sigillariæ* were trees without branches, which grew sometimes to the height of 70 feet; their trunks were cylindrical, fluted, and marked at regular intervals with spots, the different forms of which now serve to distinguish the species. They give to the plants their name, from the Latin *sigillum*, a seal. In the scalariform structure of their vessels they exactly resemble the ferns, and Dr. Hooker is inclined to believe they may have been cryptogamous plants, though more highly developed than any flowerless plants now living. They are often found most abundantly where the coal shales exhibit the greatest profusion of ferns; but in those instances in which leaves have been met with attached to the stems, they were long and slender, unlike those of ferns. These plants are so common, that no less than 22 species have been described in the coal fields of Great Britain; and some of the large beds of coal appear to have been almost entirely made up of them. Their roots, called *stigmariæ*, so named from the curious spots or *stigmata* systematically arranged upon their surface, have been found spreading out from the base of the trunks to a distance of 16 feet, and from the spots or tubercles upon the roots rootlets radiated like spokes from the nave of a wheel. Lyell noticed at the South Joggins locality in Nova Scotia, that the trunks of the sigillariæ divided below into 4 great roots, each of which soon bifurcated, and each of these was soon after subdivided into 2 smaller ones. The fire-clay beds under the coal seams are frequently as filled with them, converted into fire clay, as the soil of the forests is filled with the roots of modern trees. Hugh Miller remarks: "The sculpturesque character of this richly fretted genus was shared by not a few of its contemporaries. The *ulodendra*, with their rectilinear rows of circular scars, and their stems covered with leaf-like carvings, rivalled in effect the ornately relieved torus of a Corinthian column. *Favularia*, *knorria*, *halonia*, many of the calamites, and all the *lepidodendra*, exhibited the most delicate sculpturing. In walking among the ruins of this ancient flora, the palæontologist almost feels as if he had got among the broken fragments of Italian palaces, erected long ages ago, when the architecture of Rome was most ornate, and every moulding was roughened with ornament. In attempting to call up in fancy the old carboniferous forests, he has to dwell on this peculiar feature as one of the most prominent, and to see in the multitude of trunks darkened above by clouds of foliage, that rise upon him in the prospect, the slim columns of an elder Alhambra, roughened with arabesque tracery and exquisite filigree work."—The coal plants of the oolite period differ in some respects from those of the true coal formation. The class of monocotyledons is then first represented by undisputed palms; the coniferæ are greatly multiplied in proportion to the rest, and in forms more closely resembling existing genera; and the cycadæ, a family allied both to the ferns and coniferæ, then first appear. The equiseta abound, the same species being met with in Great Britain and in the Richmond coal field. The Brora coal in Sutherlandshire, which is the thickest coal bed of this formation in England, affording 3½ feet of good coal beside some of poorer quality, appears to have been produced almost exclusively from this family of plants. The ferns still constitute about ½ of all the species met with; but most of the strange forms of the older coal measures, the *lepidodendra*, the *sigillariæ*, *favularia*, *ulodendra*, &c., have disappeared. The calamites, too, though seen in a few forms, were about disappearing, as they passed away before the termination of this period.—It is an interesting question respecting the ancient flora, whether it is fairly represented by the forms now preserved in a fossil state or impressed in the coal shales. From the celebrated experiments of Dr. Lindley, it would appear that this admits of reasonable doubt; while the observations of Dr. Hooker, made in the regions where the living flora most nearly resembles that of the specimens preserved in the coal formation, seem to render it probable that, as in recent times the ferns and coniferæ, where they greatly abound, nearly monopolize the vegetation, so it was in the ancient periods. The experiment of Dr. Lindley consisted in immersing a large number (177) species of living plants in a tank of fresh water, in order to prove their relative powers of resisting decomposition. The results obtained were: 1, that the leaves and bark of most dicotyledonous plants are wholly decomposed in two years, and that of those that resist it the greater part are coniferæ and cycadæ; 2, that monocotyledons are more capable of resisting the action of water, particularly palms and scitamineous plants, but that grasses and sedges perish; 3, that fungi, mosses, and all the lowest forms of vegetation, disappear; 4, that ferns have a great power of resisting water, if in a green state, not one of those submitted to the experiment having disappeared, but their fructification perished. Thus those plants (the ferns) were found by this experiment most enduring in water, which we find most abundant in a fossil state; while the dicotyledonous tribes had little capacity to resist its action, and their organic remains are comparatively rare. From this it might be inferred that a large mass of vegetable organization has probably perished, and that the forms preserved are but a few specimens of the ancient flora of the earth. The fact that a collection of the fragments imbedded in the deposits of recent periods would prove but a poor index to the general mass of existing vegetation, may also be applied to the support of this inference. It is true that of the growth upon the more elevated regions of the earth, during the distant period of the production of the coal, we have no knowledge; but to the vast districts now constituting the coal fields it is reasonable to suppose that the observations of Dr. Hooker may be fairly applied, and that throughout these the vegetation varied but little from that indicated by the fossil plants. The

mense area over which the same flora was
ead, with no apparent differences between
t of the 30th and that of the 55th degree
north latitude, must have enjoyed a mild
l uniform temperature, similar to that which
w prevails through almost as great a range
latitude and almost as far from the equator
the southern hemisphere, where in the isl-
ls of New Zealand the flora is now found of
re uniform character and more abounding in
ns than in any other part of the globe. If
re were as small a proportion of land above
water in the northern regions as is now found
the southern, Sir Charles Lyell is of opinion
t the same mild climate would be extended
r all the regions occupied by the coal fields.—
ference has already been made in the article
AL to the investigations of Mr. Leo Les-
reux in relation to the fossil botany of the
rth American measures. In a paper pre-
ted to the Pottsville scientific association in
b. 1858, he has enumerated all the known
cies, and described some that are new. The
al number is about 300; but including others
l undescribed, it is supposed it will reach
. The same plants are found in beds occupy-
the same relative position in the series, even
en the localities are separated by distances
several hundred miles; thus the Gates and
lem bed, in the anthracite region near Potts-
le, is identified with the Pomeroy bituminous
l, known also from other proofs to be on the
ne geological horizon. The following will
e a general idea of the paper of Mr. Les-
ereux, and of the variety and classification
the plants of our coal measures, the leading
oups being designated by the letters A, B,
, &c.:

—*Neuropterideæ.* Fronds pinnate or bipinnate. Secondary veins either rising from a medial nerve vanishing above, or emerging and branching from the base of the leaflets without a medial nerve.
1. Noeggerathia, 6 species, all from the old red sandstone.
2. Odontopteris, 7 species, mostly from the lower coal.
3. Dictyopteris, 1 species, from upper coal.
4. Cyclopteris, *C. flabellata*, Brongn., *Whittleseya elegans*, Newberry; lower coal.
5. Nephropteris, 8 species, mostly from upper coal. "The genus can scarcely be separated from the following, most of its species being only large deciduous leaflets attached around the main rachis of *Neuropteris*."
6. Neuropteris, 27 species, mostly from the middle and upper coal.

—*Sphenopterideæ.* Frond bi-tripinnatifid, or bi-tripinnate; pinnules mostly lobed, sometimes entire; nerves pinnately forking, with a primary nerve slightly distinct, flexuous; secondary nerves obliquely ascending in each division, either simple or forking near the apex.
1. Sphenopteris, 27 species. The genus includes 2 groups, one having round, large, entire leaflets, belonging to the lower coal, the other to the upper.
2. Hymenophyllites, 8 species. Six would be added to *Schizopteris* by some authors, and these are mostly or wholly from the upper coal; the others are from the lower.

—*Pecopterideæ.* Frond simple? pinnate, bi-tripinnate, or bi-tripinnatifid; pinnules attached to the rachis by the whole base, sometimes united together. Medial nerve well marked; secondary nerves emerging more or less obliquely from the medial nerve, simple or furcate.
1. Asplenites, 1 species, upper coal.
2. Alethopteris, 15 species, appear to be distributed through upper and lower coal.
3. Callipteris, 1 species.
4. Pecopteris, 25 species, characterize mostly the upper coal, several species in the lower.

D.—*Of Doubtful Family.*
Crematopteris; Scolopendrites; Schizopteris (lower coal); Cannophyllites; Cordaites (upper coal); each 1 species.

E.—*Asterophylliteæ.* Includes herbaceous plants or trees, the stems ordinarily striated lengthwise.
1. Sphenophyllum, 9 species, upper and lower coal.
2. Annularia, 4 species, mostly upper coal.
3. Asterophyllites, 9 species, upper coal.
4. Calamites, 14 species, upper and lower coal.

F.—*Stems of Trees.*
1. Caulopteris, 3 species, mostly or wholly lower coal.
2. Diplotegium, 1 species, lower coal.
3. Stigmaria, 7 species, upper and lower coal; the *S. ficoides* from the base to the top of the coal measures.
4. Sigillaria, 37 species, mostly lower coal.
5. Syringodendron, 3 species, upper and lower coal.
6. Lepidodendron, 18 species, lower coal.
7. Lepidophloris, 2 species, lower coal.
8. Ulodendron, 2 species, lower coal.
9. Megaphyllum, 1 species, lower coal.
10. Knorria, 3 species, lower coal.

G.—*Cones, Fruits.*
Lepidophyllum, 7 species, lower coal. Lepidostrobus, 4 species, lower coal. Brachyphyllum (?), 1 species, lower coal. Cardiocarpon, 9 species, lower coal. Rhabdocarpos, 3 species. Trigonocarpon, 7 species, mostly lower coal. Carpolithes, 10 species, lower coal.

COAL PRODUCTS. The readiness shown by the elements of coal to enter into new combinations, as this is exposed to an increase of temperature, and the great variety of the combinations obtained under different degrees of heat, or by the admission or exclusion of air, indicate the close relation of coal to the products of the vegetable kingdom. It consists of the elements carbon, hydrogen, and oxygen, which make up the great bulk of vegetable matters, and these show the same disposition as in the plants themselves to separate from existing combinations and enter into new. The number of the new products thus formed is almost unlimited. They differ from one another, and from the original substance from which they are generated, as do those obtained in the processes of vegetable fermentation. As heat is applied without access of air, the vapor of water set free acts upon the existing combinations of the elements. These are broken up, and hydrogen and oxygen are evolved under the most favorable circumstances, in their nascent state, to form new compounds with the carbon present, the characters of which vary greatly with the temperature. The process is called dry distillation. By keeping the retorts in which it is conducted at a cherry-red heat, the gases used for illumination are most copiously evolved, the tar itself being decomposed and converted into gaseous matters. (See Gas.) But if the object is to obtain the coal oils, paraffine, benzole, and other hydrocarbons of this nature, care is taken that the retorts are heated very gradually, and do not acquire more than a low red heat. The tarry matters thus escape decomposition, and by repeated distillations afford crude naphtha and its secondary products. The following table represents in the clearest manner the great variety of substances beside coke obtained from this process, and their immediate sources:

TABLE REPRESENTING THE PRODUCTS DERIVED FROM THE VOLATILE MATTERS OBTAINED IN THE DISTILLATION OF COAL.

Liquids condensed and collected in tar cistern.	Coal tar gives, on redistillation with water or steam,	Distilled tar; which affords, on further distillation,	Pitch; distilled in ovens, affords	Pitch coke. Coke oil
			Dead, or pitch oil, consisting of	Naphthaline, paranaphthaline, and oily hydrocarbons boiling at a high temperature, creosote, aniline, leucoline, paraffine.
		Crude coal tar naphtha, which consists of		ACIDS—Rosolic, carbolic, brunolic, creosote. Basis of the pyrol, picoline, aniline, leucoline, methylamine, ethylamine, and other series. Neutral: Allile, benzole, toluole, cumole, cymole, and other carbohydrogens; naphthaline, hydrate of phenyle (Laurent).
	Ammoniacal liquor, containing	Water, hydrosulphate, carbonate, muriate, acetate, hydrocyanate, sulphite, and gallate of ammonia.		
Gases and vapors.	Gases and vapors separated in lime purifier.			Carbonic acid. Sulphuretted hydrogen. Hydrocyanic acid. Ammonia.
	Gases and vapors separated sometimes by additional chemical agents.			Ammonia. Hydrocyanic acid.
	Gases and vapors conducted to gas-holder.			Olefiant gas. Vapors of hydrocarbons. Light carburetted hydrogen. Hydrogen. Carbonic oxide.
			Very small quantities of	Nitrogen. Vapor of bisulphuret of carbon. Ammonia.

Coal tar was for a long time a troublesome product of the gas works, no useful application of it to any great extent being known. It was employed as a covering to protect iron work exposed to the weather; and the pitch obtained by distilling it was found when mixed with earthy matters to be a good substitute for the natural product asphaltum, used for artificial pavement, water-tight covering for roofs, &c. Finally the tar came to be an object of purchase by tar distillers, who learned to extract from it the crude naphtha and also the light oily fluids. The pitch, too, by repeated distillations was made to yield more oily matters, which are useful for lubricating machinery and other purposes. The crude naphtha is now purified by mixing it with $\frac{1}{10}$ its bulk of concentrated sulphuric acid, adding when cold 5 per cent. of peroxide of manganese and distilling off the upper portion. A rectified naphtha is thus obtained, which readily dissolves caoutchouc, and mixed with wood naphtha produces a powerful solvent of various resinous substances, useful in making varnishes. Still further purified, the liquid benzole is obtained, which is already applied to many useful purposes, and is likely to become of much greater importance as an illuminating agent. The light essential oils, as also the heavier qualities which come over after these, are found to possess antiseptic properties, which render them of value for preserving wood from decay. From the essential oils the tar creosote or carbolic acid is obtained, which possesses extraordinary antiseptic properties, and is used in the preparation of a valuable dye stuff called carbazotic acid. The heavy oil yields a substance called kyanol or aniline, which gives with bleaching powder and other agents a magnificent blue color, and is likely to be employed in dyeing as a substitute for indigo. Naphthaline also, which is a solid white substance obtained in large quantities in the distillation of the tar, yields two coloring matters, one called naphthalic acid, and the other chloronaphthalic acid: the latter of which is nearly identical with the coloring principle of madder, and gives with alkalies a beautiful red color. Instead of naphthaline, by conducting the distillation at a lower temperature, may be obtained the waxy substance called paraffine, which is now used for the manufacture of candles and the paraffine oils. The most important of these products will be found more particularly noticed under their separate heads, and the general subject will receive further attention in treating of gas light.—At a late meeting of the British association at Leeds, specimens of dye were exhibited prepared by Mr. W. H. Perkins by oxidizing aniline with bichromate of potash; specimens of silk dyed with it were also exhibited. The dye is a bronze-colored substance, dissolving in alcohol with a beautiful purple color. In concentrated sulphuric acid its solution is green. On adding water and precipitating with an alcoholic solution of potash, the coloring matter is precipitated unchanged. It is of intense hue, and considered as good if not better than archil; it is very stable, not being decomposed at a temperature of 482° F. Tons of silk have already been dyed with it, and it is recommended for other materials. One pound of the solid substance will dye 200 lbs. of cotton a moderately dark lilac, the color standing well the action of light and heat, acids and alkalies. —By the process of Mr. James Young of Manchester, patented in 1850, the distillation of coal for obtaining paraffine and the oil accompanying it is conducted in the following manner: The retorts used are like those employed in making gas. A worm passes from them through a refrigerator kept at a temperature of about 55° F. The oil condenses in the worm, and is collected in a receiver. It deposits some paraffine when cooled to a low degree. Some illuminating gas is generated in the process and escapes. Coke also remains in the retort, as the gas-making process. The oil is purified heating a cistern of it to about 150° F. ater and insoluble impurities subside on standg, and the oil may be drawn off. It is redisled to dryness, and a carbonaceous residuum eft in the iron still. From the cold condenser is run into leaden vessels, and $\frac{1}{10}$ its bulk of of vitriol is added and the mixture is well rred for an hour. In 12 hours the sulphuric d has settled, together with the impurities it s taken up. The oil is then drawn off into iron vessel, and 4 gallons of a solution of ustic soda, of sp. gr. 1.3, are added to every 0 gallons of oil. This is well stirred for an ur, to take up all the remaining acid, and it is en left for 6 or 8 hours for the soda and imrities to subside. The oil is again drawn off d distilled. Paraffine oil thus obtained conns a more volatile oil, that may be mostly parated from it. Half its bulk of water is addto it, and the mixture is distilled as before, the iling being continued for 12 hours by renewg the loss in the still with more water. The am carries the more volatile fluid over with They condense in the worm, and separate standing in the receivers. This fluid is itable for burning in lamps and for other purses. The oil left in the still is to be drawn ay from the water left with it, purified by stilling from $\frac{1}{30}$ its bulk of sulphuric acid, d then from chalk added as the caustic da was used. The oil is kept for a week in a rm place, and being then drawn off from the diment is fit for lubricating or illuminating rposes. Cooled to 30° or 40° F., the parafne crystallizes, and may be collected by pressg out the oil through cloths.—An improveent was made upon this process by Mr. William Brown, and patented in England in 1853. This consists in introducing highly heated steam into the retorts with the bituminous matters. It rapidly unites with and carries off the volatile matters arising from the coal, checking their conversion into gas, and greatly increasing the amount of oily or condensable product. The condenser is kept at a temperature of about 55° F. The products obtained are next distilled, and very hot steam is introduced again, if much paraffine rather than oil is desired. At different stages of the process different products are obtained, which are separately collected. These are, first a thin, impure, eupione oil, to the extent of about $\frac{1}{8}$ of the fluid; then a thicker and heavier oil, containing paraffine, amounting to $\frac{2}{3}$ or $\frac{1}{2}$ of the fluid; and lastly, paraffine mixed with heavy oil. The crude eupione oil is purified by adding 5 to 10 per cent. of sulphuric acid, diluted with an equal bulk of water, and half as much by weight of bichromate of potash as of the acid. Heat is then applied, and the mixture is well stirred while heating. When it has reached the temperature of 212° F. it is allowed to cool and settle. The eupione, being drawn off, is next treated with a warm solution of caustic soda, and left to settle. It is at last taken off from the heavier fluid and distilled. The heavier oil is treated very much in the same way, the black oxide of manganese instead of the potash salt being sometimes used with the sulphuric acid. The first comings over in the distillation are added to the eupione oil; but the greater part is the so-called "lubricating oil," the most important product of the process. The last portions are thick like butter, and yield mostly paraffine when treated with that already obtained with the heavy oil. This, after being allowed to crystallize in a cool place, is put in a bag for the oil to drain away. It is then pressed, melted, and when cold pressed again, the oil being added to that already obtained. It is melted again, and at the temperature of about 400° F. from 5 to 10 per cent. its weight of strong sulphuric acid is stirred in. On boiling, the remaining oil is completely charred, and on cooling settles as a black powder. Another boiling after separating this powder completes the purifying process, though the paraffine is now after several new methods bleached to a beautiful degree of whiteness. Its properties will be described in the article PARAFFINE.—Coal oils are manufactured at several localities in the United States. Important works recently in operation at Cloverport, in Breckenridge co., Ky., on the Ohio river, were destroyed by fire in 1858. They produced large quantities of an oil of excellent quality, which was on trial with a view to its being introduced into our lighthouses. It is greatly to be desired that these enterprises may succeed, and this new inexhaustible source of supply of illuminating oil prove sufficiently remunerating to establish the manufacture upon a sure basis. Not only the cannel coal and other fat coals produce these oils, but the bituminous shales, until of late years regarded as worthless, have been applied at Dartmoor, in the west of England, at Autun, France, and at Bühl in Prussia, to the same purpose. It is stated that in England the price of sperm oil has been reduced since the introduction of coal oil at least 25 per cent., while the importations of oil have been reduced one-half.

COAMINGS, in ship-building, the raised borders or edges of the hatches, made to prevent water from running below.

COANZA, a river of Congo, in West Africa, forming in the lower part of its course the southern boundary of Angola, and entering the Atlantic with a broad, turbid stream, in lat. 9° 20′ S. and long. 13° 12′ E. It has been traced eastward as far as long. 20° 30′ E., and is reported by the natives to issue from one or more large lakes on the eastern frontier of Cassange. The kingdom of Quilna, and the Portuguese settlements Cambabé, Massangano, Muchima, and Pongo-Andongo, are situated on the shores of this river, which is navigable more than 100 m. from its mouth, but crocodiles render the navigation dangerous for small craft. At 150 m. above its mouth is a cataract, the noise of which is heard at a considerable distance.

COARI, a Brazilian river, having its whole course in the province of Alto Amazonas, runs N. E., forms the boundary between the districts of Teffe and Coari, traverses a considerable lake, and divides near Alvellos into 2 arms, which join the Amazon. Length of the river, 285 m.

COAST RANGE, or COAST MOUNTAINS, a mountain range of California, nearly parallel with, and 80 to 100 m. distant from, the Pacific coast, and extending from near the boundary of Oregon into the peninsula of Lower California. Several of the summits are covered with perpetual snow. The range has frequent spurs, and is interrupted by the bay of San Francisco.

COAST SURVEY, UNITED STATES. The coast survey of the United States is a national undertaking of the highest character and importance. Having an extended and dangerous seacoast, with a foreign commerce of $600,000,000, in the pursuit of which nearly 20,000 vessels annually enter and leave our ports, these vessels manned by over 200,000 seamen, while half as many more vessels and men are engaged in our coasting trade, and vast numbers of passengers and emigrant strangers arrive at and leave our shores, it is plainly our duty as a nation to provide every means which science and practical skill can afford for pointing out the dangers to which this commerce is exposed, and to furnish every facility for its successful prosecution. To accomplish these objects the coast survey was founded. It is designed to furnish accurate maps of the whole coast; to point out the positions for lighthouses, beacons, and other signals; to determine the character and course of the currents of the ocean along our shores; to develop and determine the laws of the tides; to ascertain the prevailing courses of the winds and the general laws of atmospheric influence, the changes which take place at the entrances of our harbors, the character of the bottom of the sea, within the limits of soundings, and all other questions which contribute to a thorough knowledge of our coast and its adjacent waters. It has also the further object of distributing this knowledge throughout the world, so that all nations may partake of its advantages. For the accomplishment of these objects a wide range of application of the practical sciences is required. Astronomy and geodesy furnish the means of projecting maps. The highest forms of mathematical science are required in the investigation of the laws of the tides, and the figure of the earth. Geology explains the changes which are constantly taking place in all our harbors and rivers, and the general form of the coast. Natural history accounts for the formation of those coral reefs in the southern waters, so long the terror of navigators, predicts their growth and extension, and investigates the forms of animal life at the bottom of the sea, thus affording new and unexpected aids to navigation. Physical science furnishes the electric telegraph, by which longitudes are determined, and the electrotype and photograph, by means of which engraved plates and charts are indefinitely multiplied. The mechanic arts supply the most delicate instruments, and the industrial arts of drawing, engraving, and printing, are all required in their greatest perfection. For the expanded conception of this great institution, as it now exists; for the administrative skill which has perfected its organization; for the solution of the most interesting questions of science which it has involved, especially those of the tides, the gulf stream, and the magnetic force; for the genius which has brought to the highest perfection the scientific methods employed; for the untiring labor which has, within the short period of 14 years, produced greater results than any other institution of the kind, the world is greatly indebted to Prof. A. D. Bache, the present superintendent of the United States coast survey. The first attempt to organize a national coast survey was made in the year 1807. In that year President Jefferson, in his message to congress, recommended the establishment of a national coast survey, "for the purpose," according to the message, "of making complete charts of our coast, with the adjacent shoals and soundings." At that time the only charts of our extended and dangerous sea-coast were those of the "Atlantic Neptune" of Col. Des Barres, Romaine, Gauldel, and compilations from those works by English and American publishers. Congress accordingly passed an act authorizing such a survey, and appropriated $50,000 for the purpose of carrying out the provisions of the law; and the secretary of the treasury, Mr. Gallatin, addressed circulars to the principal scientific men of our country, requesting their opinions with regard to the best methods of conducting the proposed work. The plan proposed by Mr. F. R. Hassler was adopted: this plan was essentially to establish the positions of certain prominent points of the coast by astronomical observations, and to connect these points by trigonometrical lines, so as to form a basis upon which the nautical survey could be made. Mr. Hassler, a native of Switzerland, had been engaged in the trigonometrical survey of that country, and was eminently fitted by his scientific attainments for the execution of the task to which he was now called. On account of the threatening nature of our relations with Great Britain, nothing was done, however, until 1811, when Mr. Hassler was sent to Europe, for the purpose of procuring the necessary instruments and standards of measure for commencing the work, and the war which followed unfortunately caused him to be detained abroad as an alien enemy until 1815. On his return, he was formally appointed superintendent of the coast survey, and commenced his first labors in the field in 1817, in the vicinity of New York. His first work was the measurement of a base line, in the rear of the palisades of the Hudson, as a foundation for the triangulation of New York harbor and the adjacent coast. Before he could publish

of his first year's labor, however, the
y was effectively discontinued, and
g interval of 10 years elapsed, dur-
he additions made to a knowledge
ntic coast were through detached
few of the more important harbors,
e navy and the topographical engi-
army, and those of the Messrs. Blunt.
e Hon. Samuel L. Southard, then
f the navy, urged upon congress
nce of reëstablishing the coast sur-
original plan; and in 1832, 4 years
Mr. Hassler was restored to his
nd enabled to resume the work
had before commenced. A quar-
ntury had now elapsed since Mr.
t urged his scheme of a thorough
ical survey; he continued to super-
perations until his death, which oc-
848, when the survey had been ex-
New York eastward to Point Judith,
ard to Cape Henlopen. He was
n his important office by Prof. A.
the present superintendent.—On
harge of the coast survey, Prof.
the necessity of extending the plan
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n. He urged upon congress the im-
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bined, threaded out and mapped;
ic force of the earth studied, and its
our coast determined; the changes
her at different seasons of the year,
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were far beyond any that had been
, and Prof. Bache at once organized
matic observations which have ex-
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hich are now developing the most
esults to navigation and to science.
neral facts with regard to the history
ss of the U. S. coast survey being
ome to the scientific and practical
involved in its execution.. An ex-
f these operations will embrace a
topics, and a brief notice of each
given. The first object of a work
l is an accurate determination of the
this is done entirely by operations
The object of a map or chart is of
ive a miniature representation of a
the earth's surface upon paper, in
ner that the different parts of the
all have the same relative positions and dimensions as are found in nature. To determine these dimensions by lineal measurement for the purpose of reducing them to the scale of the drawing would be practically impossible, and hence the use of geodetic or trigonometrical surveying.—*Geodesy.* To illustrate this mode of measuring distances and establishing the relative positions of points on the earth's surface, let us suppose ourselves to be situated on a level plain, surrounded in the distance by high mountains, and that we wish to determine the distances from our position to the tops of those mountains, and the distances of the different mountain peaks from each other. A line is measured on the plain of such a length that if two lines be drawn from its extremities to one of the mountain tops, they will intersect at a considerable angle and form with the measured line a triangle of proper dimensions; then knowing the length of one side of this triangle, we may compute the length of the other two sides by a simple theorem of trigonometry, without any further labor than measuring the angles of the triangle. Taking now either of the computed sides as a new base, we may establish a second triangle upon this, and thus fix the position of another point; a third point may be established in the same manner, gradually expanding the system until the whole region we wish to embrace in the map is covered with a network of triangles, the lengths of the lines having been computed by measuring the first only and then measuring the angles of the triangles. For the purposes of a map or chart there are still two important elements wanting. We have yet no means of knowing the direction of any one of these lines with reference to the meridian, nor the place which the points occupy on the surface of the earth; the survey thus far will give no means of knowing whether any two points are situated in a north and south or an east and west line, nor whether it be located near the equator or near the poles, or to the east or west of the first meridian. These wants are supplied by astronomical observations, by which the latitude and longitude of some point, and the directions of the lines with reference to the meridian, are determined. The system of triangles which we have described may be extended over large areas, or along a coast for several hundred miles, depending upon one measured base line; and by determining the positions of the extremities of the base line and its direction by astronomical observations, the positions of all the other points of the system and the direction of the lines may be computed after the angles are accurately measured; but accuracy requires that the computed positions should be frequently verified by actual observation, and the computed lengths of the lines occasionally verified also by the introduction of a measured base of verification. The geodetic work thus involves the measurement of the base line, the measurement of the angles of the triangles, and the astronomical determination of the latitude and longitude of the dif-

ferent points, and of the directions of the lines with reference to the meridian.—*Reconnoissance* is the first operation in order. An experienced officer first travels over the country to be surveyed, and makes a preliminary examination for the purpose of selecting the trigonometrical points which will best fulfil the required conditions. Elevated positions are generally chosen, from which extended views can be taken. A site for a base line is selected on some level plain for convenience of measurement, and from which the triangulation can easily be expanded. In the selection of geodetic points great judgment is required, as upon this depends in a great measure the economy, accuracy, and success of the work.—*Base line.* For the measurement of the base line a standard of measure must be adopted. The English use the yard, which is also the legal standard of length in the United States, but in the coast survey measurements the French *mètre* is used, which is more convenient on account of bearing a certain relation to the magnitude of the earth, being equal to the ten millionth part of the earth's quadrant. The metre bar used as standard in the coast survey is one of those originally made by the French committee of weights and measures. For the actual measurement of base lines, rods of wood, metal, or glass have been used; but the changes of length caused by changes of temperature in a simple bar of any material have rendered it desirable to construct an apparatus for the special purpose, upon a compensating principle, which will retain the same length under all temperatures. The base apparatus of the coast survey, devised by the present superintendent, is considered the best known. It has the same length not only at all stationary temperatures, but preserves it also while the temperature is changing. Bars of different metals, having the same dimensions, and exposed to the same source of heat, will not heat equally in equal times. The thickness and surface of the bars are therefore so proportioned to their relative power of conducting and absorbing heat that they will equally follow changes of temperature. The principle of the level of contact has been applied to this apparatus, and the exactness of its operations is so great that lines of 7 or 8 miles in length may be measured with a probable error of only a fraction of an inch. Two sets of compensated bars are used, each 6 metres, nearly 20 feet, in length. Mounted on trestles provided with every mechanical movement for adjusting the bars in height and direction, it is handled with such facility that on favorable ground a mile may be measured in an ordinary working day.—*Triangulation.* For the measurement of the angles, theodolites of the most accurate construction are used. In the primary work on the eastern coast a large theodolite, with a circle 30 inches in diameter, is employed. This is carried to the summit of the hill or mountain where the angles are to be measured, and established carefully over the station point, where it is left standing until the measurements at that point are completed. The party having this work in charge live in tents near at hand, so as to take advantage of the occurrence of favorable weather for the observation of distant signals. The instrument is furnished with a powerful telescope, which will give a distinct view of such signals. The signals are generally straight poles, supported by a tripod, erected at the various points, but on the long lines an instrument for giving signals is used called a heliotrope. This is simply a round mirror about the size of a dollar, so mounted that an assistant at the distant station is able to reflect the rays of the sun in the direction of the observer. It is not unusual to see the heliotropes on the summits of mountains 80 or 90 miles distant, when the outlines of the mountains are not visible. The measurement of the angles at a primary station occupies 3 or 4 weeks; it is found to be impossible to work during the middle of the day, on account of the agitation of the atmosphere caused by the heat of the sun, and hence only about 2 hours in the morning and evening can be devoted generally to this work. Each angle is determined by about 30 measurements; and as at each station there are always from 10 to 20 angles to be measured, only 2 or 3 primary stations can be occupied in one season. Depending upon the primary triangulation, and controlled by it, a network of secondary and tertiary triangles is formed along the sea coast, and extending up the bays and rivers. The angles are measured with theodolites more portable than the one mentioned, of inferior size, varying from 6 to 12 inches diameter, according to the distances to be observed. These triangulations determine the relative positions of prominent points at distances averaging from 2 to 5 miles, and thus form a skeleton map, in which the details of configuration of shore line and surface remain to be supplied by the topographical survey. In order to fix the situation of the whole network of triangles on the surface of the earth, it would suffice to determine the latitude and longitude of some one point, and the direction with reference to the true meridian of one of its lines—its azimuth—if the figure of the earth were precisely known. But owing to the irregularities of the latter, it is found necessary to repeat those determinations very frequently, by which means the work is checked, and any accumulation of error avoided.—*Latitude.* All the various known methods of determining latitude have been used in the coast survey for the purpose of ascertaining their relative merits. Large vertical circles, or repeating theodolites, were first used for observing double altitudes or zenith distances, but made way for more perfect and larger instruments, the zenith sector, the prime vertical transit, and the zenith telescope or equal altitude instrument. The former, constructed according to the plan of Prof. Airy, the astronomer royal of England, gives very satisfactory results, but is rather heavy for transportation, and the observations are laborious. The method of de-nining latitude by observations of transits stars over the prime vertical, first used by sel, is admirable in theory, but in practice a at loss of time and labor is often caused by ids. The zenith telescope, or equal altitude rument, was first applied to the determi- ion of latitude by Capt. A. Talcott, late an er in the U. S. army, and has been remod- d and specially adapted to the purpose in the st survey, where it has become the favorite rument on account of the great number and racy of the results that can be obtained in iven time, and the facility with which it is l. A large number of observations, from to 200, are made at each station, and the n is taken as the result, the uncertainty of ich is thus reduced to a small fraction of a nd.—*Longitude.* For the purpose of de- nining the longitude of all points in the coast rey with reference to Greenwich and other opean observatories, it is only necessary to rtain that of some one point, the difference a which of all others is known by the ngulation and by differences of longitude ined by means of the electric telegraph. observatory at Cambridge, Mass., has been l as such a point of reference; its longitude n Greenwich has been determined by astro- ical observations of eclipses and occultations tars by the moon, and of moon culminations, le not only there but at other observatories the United States, the longitude of which n Cambridge has been determined by elec- c telegraph. Beside the astronomical me- ds, the chronometric method has also been d. A large number of chronometers have n transported repeatedly, and in different rs, between Cambridge and Liverpool, for the rpose of comparing the time of the observa- ries at these places. The results of these expe- tions, in which special regard was had to the ef- ct of temperature on the rate of the chronome- rs, show a pretty close agreement in different ars, but differ nevertheless from those by as- onomical observations by about 2 seconds of me. It is to be hoped that a submarine tele- aph will ere long afford another, and perhaps ry accurate method of verifying those results, nd determining the longitude within the nar- owest limits of error. The telegraphic deter- inations of longitude have been extended from Washington northward to Philadelphia, New York, Cambridge, Bangor, and Halifax, and southward to Petersburg, Wilmington, Charles- ton, Savannah, Mobile, and New Orleans. In this method, which is by far the most accurate or determining difference of longitude, the coast survey has taken the lead, and has brought t to a great state of perfection, which subsequent perations of a similar nature executed in Eu- ope have not yet reached. The idea of com- aring the local time of different places by eans of the electric telegraph is sufficiently bvious, and dates from the conception of the elegraph itself; but the refined methods by which the intervention of human senses and operations, and the consequent liabilities to error, are in the greatest possible degree avoided, and by which the time of transmission is measured and eliminated from the longitude, have been the result of careful study and long experience. The first experiments on the velocity of galvanic signals were made in 1848; they have since been frequently repeated, and the velocity is found to vary from 10,000 to 20,000 miles per second, according to the size and kind of wire employed. The manner in which this experiment is made is essentially as follows: An astronomical clock is so connected with the telegraph wires as to graduate by its beats slips of paper, delivered with uniform velocity, into spaces representing seconds of time, each about an inch in length, both at the place where the clock is and at some distant station. If now at the latter station arbitrary signals are made between those given by the clock and transmitted to the clock station, the corresponding marks on the register at that place will appear later, or more distant from the preceding clock marks, than on the register where they are made, the difference measuring the whole time of transmission from the former to the latter station and back again. On the Pacific coast, and at stations in the gulf of Mexico to which telegraph lines do not yet extend, longitudes have been determined by the astronomical methods.—*Azimuth.* The direction of the meridian is determined by observations on the pole star or other close circumpolar stars at the time of their passing the meridian, or of their greatest eastern or western elongation. The angle between the vertical plane passing through the star and that passing through one of the triangle sides is measured with a theodolite. The angle which the former plane makes with the meridian can be computed from the time of observation and the star's place, and thus the azimuth or true bearing of the triangle side becomes known, as well as the bearing of all other sides connected with it by triangulation.—*Geographical positions.* The geographical positions of coast survey stations, as determined by the means above detailed, and bearings and distances (expressed in metres, yards, and miles), are published from time to time. In the coast survey reports for 1851, '3, '5, and '7, the positions of 5,500 trigonometrical stations are given.—*Topography.* This is a representation on paper of the natural features of the country. The outlines of the shore, the irregularities of the surface, the forms and dimensions of hills, forests, streams, rocks, meadows, towns, and villages, are all represented by certain conventional modes of drawing, well understood by those who make use of the maps. The drawing presents to us the surface of the earth as it would appear to an observer from above it. The surveyor uses a table or board, on which is fitted a sheet of drawing paper; on the latter several points of the triangulation are already plotted. In order to map intermediate points, he places his table on the ground and determines its place on the sheet by drawing lines on the paper in the directions of at least 3 of the trigonometrical points; the intersection of these lines on the paper will give the position which his table ought to occupy on the map. Having fixed this point, he directs his rule to any prominent points in sight, and draws lines in their direction. Then, going to a second point and fixing his position in the same way, he sights to the same objects as before from his new position; the lines so drawn will fix by their intersection the places of all these points on the map. It is, in fact, a practical continuation of the triangulation on a minute scale. Accidental details of ground and slight irregularities of shore line may be drawn by the eye. The topographical maps are generally surveyed on a scale of $\frac{1}{10000}$ of the natural dimensions. In localities where a great amount of detail is to be represented, such as large cities and their vicinity, a scale of $\frac{1}{5000}$ is employed, while on flat and thinly settled ranges of the coast a scale of $\frac{1}{20000}$ is used. The extent of ground represented upon a single topographical sheet depends upon the scale; on a scale of $\frac{1}{10000}$, or about 6 inches to the mile, a square foot of the drawing represents about 4 square miles of the surface of the earth.—*Hydrography.* The survey of the land being completed by the methods detailed, the hydrographer is prepared to refer his examinations and soundings to their true positions. Under the head of hydrography are placed all those operations which are performed at sea for the determination of the positions of rocks, shoals, the depth of the water, and the investigations of tides, currents, &c. The principal labor is that of sounding. With the outlines of the shores furnished by the topographer, the hydrographer has only to measure certain angles upon the shore signals every time he throws his lead, and the position of every sounding is thus determined with such accuracy that the navigator may even run his course by the soundings given on his charts. The angles are measured by a sextant, and the position of the boat or vessel is by means of them laid down on the chart. In practice the position of the boat is not determined at every sounding, but at every 6th or 10th, according to frequency; and the intermediate soundings, being taken at equal intervals of time, are laid down at equal intervals between the positions determined by angles. The number of soundings is generally so great that the features of the bottom of the sea within a wide belt adjacent to the coast are almost as well determined as those of the land; and with the further assistance of the specimens of the bottom, which are always brought up with the sounding lead, the mariner may, during foggy weather, determine his position with considerable accuracy by sounding alone.—*Office work.* The observations and charts made in the field are at the close of each season's work sent to the coast survey office in Washington, where they are combined to form the charts. The triangulation and astronomical observations are subjected to a double computation, first by the observers and next by the computers in the office, in order to insure perfect accuracy and faithfulness. The topographical and hydrographical sheets are combined, and reduced drawings are made on scales suitable for publication. A connected series of charts of the whole coast is projected on a scale of $\frac{1}{80000}$. Beside these, local charts of harbors and bays are published on larger scales, adapted to the importance of the locality and amount of detail to be shown. General coast charts are also published on a scale of $\frac{1}{400000}$. When the reduced charts are drawn and verified, they pass into the hands of the engraving division of the office, where they are executed on copper in the highest style of art. When the plates are completed, electrotype copies are taken of them, which serve for printing the charts, the original plates being preserved in the archives of the coast survey. The electrotyping establishment of the coast survey is very extensive, and one of the most successful in the world. It was in practical operation several years before the process came into general use, and considerable advances were made in the art at this establishment. The charts are finally printed at the coast survey office, and distributed to sale agents in the principal seaports. The prices are fixed at very low rates, so as to place a complete set of charts within the reach of every navigator. Provision has been made by congress for the publication of the observations made in the progress of the coast survey, so as to place the data on which the correctness of the charts depends beyond the possibility of loss, and to submit them to the criticism of the world.—*Organization.* The operations of field work, which have been described, are carried on simultaneously at a great many points on the coast. The Atlantic and gulf stream are divided into 9, and the Pacific coast into 2 sections, each having its triangulation, astronomical, topographical, and hydrographical parties, all working independently, but upon the same system, so that in the end the whole will form a connected survey from Maine to Texas, and from San Diego to the 49th parallel on the Pacific. For conducting these operations, there are employed in the coast survey, exclusive of hands and seamen, about 36 civilians of different grades, 12 or 15 army officers, and 50 officers of the navy; a great number of the latter being required for the vessels engaged in the hydrography, which are under naval discipline. This force does not include computers, draughtsmen, engravers, and clerks employed in the office. The whole work is under the control of the U. S. treasury department, while the superintendent directs all the details of the work, governs the movements of the parties, and controls the expenditures. The expense is defrayed from annual appropriations by congress, made upon estimates submitted by the superintendent, which from 1853 to 1858 have amounted to about $200,000 for the Atlantic and gulf coast, and about $150,000 for the western coast.

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the year's operations are not only
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the efforts of philosophers to deter-
precise figure and size of the earth.
known that the earth is not exactly
but is flattened slightly at the poles
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determination of the relative lengths
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physical problems of all ages, the
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means of determining these lengths,
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coast, will furnish, incidentally, val-
tributions to science in this respect.
of 3½ degrees or about 210 miles
asured from the island of Nantucket
Blue in Maine, another from the
hesapeake bay to Portsmouth, Va.,
re of parallel along the gulf of Mexi-
e measurements will involve no ad-
abor or expense. An arc of meri-
miles in length has been measured
one of 1,800 miles through Russia,
from the Black sea to the Arctic
another of 900 miles in France, from
to the island of Formentera in the
ean. Several arcs have also been
in Germany, and in fact there is
ivilized nation that has not contrib-
are to our knowledge of this subject.
the first attempts to measure the
e that the science of geodesy origi-
ulf stream. For an account of what
urvey has accomplished in improving
edge of the gulf stream, see ATLANTIC
Tides. One of the most difficult ques-
h has ever been presented to men of
the solution of the problem of the
e importance to the mariner of know-
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by sand bars, which can only be
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draught at the highest stage of the water. It becomes therefore an object of immense importance to commerce and navigation to determine the laws which govern this rising and falling of the sea, and to furnish to the mariner such rules as will enable him to predict with certainty all the phenomena connected with this important subject. There is indeed no subject which is so constantly in a sailor's thoughts on approaching the entrance to harbors and rivers as the tides; in many cases the safety of his ship and his life depend on his precise knowledge of the time of high water, or the ebb and flow of the current. A question of such high importance has not escaped the most rigorous investigations of philosophers. Its solution theoretically was one of the first results of Newton's theory of gravitation. The most casual observer may notice the close dependence of the tidal phenomena upon the moon's motion; the wave of high water following the moon in her motion around the earth by a determinate interval of time, and the height of the tide depending also upon the positions of the sun and moon. As the elevation of the water is produced by the joint attraction of the sun and moon, the height will be greatest of course when those bodies are in conjunction, that is, at new and full moon, thus giving rise to what mariners call spring tides. When the moon is 90° distant from the sun, or in quadratures, the joint effect will be least, and the neap tides will be produced. The discussion of this problem has engaged the attention of the most profound mathematicians since the days of Newton, particularly Laplace; and yet the mathematical theories, although correct, have failed until recently in giving results which have been confirmed by observations. The cause of the discrepancies has existed, not in the mathematical deductions, but in a want of knowledge of the physical geography of the globe, and of the depth and form of the bottom of the sea; and although very important advances in our knowledge of this subject have been recently made by the investigations of Sir John W. Lubbock, Professors Whewell and Airy, and still more recently by the superintendent of our coast survey, Prof. Bache, yet it may be said that even with the vast accumulations of observations which have been made, to aid in the investigation of this subject, it is still one of the most perplexing questions in physical science. The investigations of Prof. Bache have given more satisfactory results, in some instances, than any previous efforts. On assuming charge of the coast survey, Prof. Bache organized a system of tidal observations embracing the entire coast; it is the most extended system of observations that has yet been attempted, and has already produced highly useful results. Observers are required to note hourly the height of the water at each tidal station, by means of a staff placed in the water, by which also the precise times and height of high and low water can be determined. A self-registering

machine is also much used, which, through the medium of clockwork, traces a curve on paper representing the successive changes in the height of the water. Over 800 tidal stations have been established on the Atlantic coast, and on the western coast observations have been made at frequent intervals for about 1,300 miles. The observations at the principal stations are continued through several years. The investigation of so many observations of course involves very laborious computations, the great object being to combine the results of the observations with theory, in such a manner as to furnish rules for the prediction of future results. The results of this branch of investigation in the survey have been published in the annual reports of the superintendent as the work has progressed, showing the success which has attended his labors. The report for 1856 contains tables of comparison of predicted tides of Boston harbor with the results of actual observation, in which the predicted times of high water coincide with the times observed within 4 minutes. Such accurate results had never before been attained, and this contribution to knowledge may be regarded as one of the most important of the present day, and one which will prove of inestimable advantage to the commerce and navigation of our coast. In the same manner tables have been constructed for over 60 points on the Atlantic coast, and 14 points on the Pacific coast, by which navigators may ascertain the time and height of high and low water at each place for any day in advance, with a certainty heretofore unknown.—*Mariner's compass.* It is well known that every navigator determines his course and direction by means of an instrument called the mariner's compass; an instrument which depends solely upon the direction which a small needle or bar of steel assumes, when magnetized and left free to move in any direction. This direction is nearly north and south, and it was formerly supposed that the north end of the needle pointed directly to the north pole of the earth, to which it was attracted by some powerful agent in the polar regions. Continued observation and study of the subject, however, disclosed the fact that this was not true; the real direction of the needle at any point between the equator and the poles is inclined to the horizon, and also to the true meridian; or in other words, the needle has a dip and a variation or declination. At Key West, for instance, the dip of the needle is 55°, at Cape Hatteras 68°, at New York 73°, at Halifax 76°; while the declination is 5° E. at Key West, and 6° W. at New York; and between these places there is a line where there is no variation from the true meridian; this line passes near Wilmington, N. C., Charlotteville, Va., and Pittsburg, Pa. Going westward from this line, the declination of the north end of the needle to the east of the true meridian increases rapidly until the Pacific coast is reached, when it is from 15° to 20° E. It is found also that the direction at any one place is not constant, but that it changes not only during each day but from year to year. In surveyors' and mariners' compasses the dip of the needle is overcome by suspending it from a point above its centre of gravity, but the declination still exists and gives rise to what is popularly called the "variation of the needle." Surveyors on land generally have the means of ascertaining the variation by astronomical observations, by which very great errors in their maps may be avoided, but the common mariner has no such resource. In sailing from the gulf of Mexico to Portland, Me., his compass would pass through all points, fr[illegible] 5° E. to 12° W.
How is he to know this, un[illegible]
on his chart? And how wi[illegible]
year answer for another, when [illegible]
is constantly changing? It is [illegible]
laws which govern these c[illegible]
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The determination of these laws, [illegible]
actual direction of the needle at v[illegible]
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Prof. Bache before he assumed [illegible]
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s will exhibit the advantage of an intelligent lication of true scientific principles in all works of this character. Previous to the year 1844, 800 vessels were wrecked annually on ur coast, attended with a great loss of human ife; of these vessels ¼ were destroyed on the lorida reefs; and to illustrate the causes which ed to this great loss of life and property, it ill only be necessary to mention a few of the coveries made by the survey of the coast. entrance to Delaware bay between Cape y and Cape Henlopén was found to be 8 es in error. Six dangerous shoals were discovered in one year in the vicinity of Nantucket, ring directly in the track of our European com- e and of the heavy coast trade between eastern and southern coasts. A new chan- with 2 feet more water than any other, was ered at the entrance to New York harbor. erous shoals have been discovered at the nce to Chesapeake bay and along the coast irginia and North Carolina. Numerous thers might be mentioned of no less importnce. but these are sufficient to show the inac- s of all our charts previous to the inves- ns of the coast survey. The means that been applied to correct these great evils e not been incommensurate with the end.— y be said that advantage in economy is e least of the practical results of the ific methods of the coast survey. Com- with foreign surveys, it is not only more te and detailed, but its results have been uced with a rapidity and economy alto- r unprecedented. The English survey was nced in 1791, and is still unfinished, nd work being unconnected, generally, the hydrography; and the cost of the sh survey is more than 4 times the cost rs. During the 10 years previous to 1848, reat Britain expended for hydrography alone),000. The total cost of the United States survey up to that time was only $800,000, ing land work and hydrography. The s alone on the goods of half a dozen ships y amounted to the whole annual appro- ion for the coast survey, and at the present the annual cost of the survey is but little er than the cost of a first class steamship. this small amount of expenditures the vey has been extended so as to embrace the ole of our Atlantic and Pacific coasts; the Atlantic coast being divided into 9 sections, the Pacific into 2. During the year 1857, triangulation parties, 3 astronomical parties, hydrographic parties, 23 topographic parties, 2 magnetic parties were in the field, be- the computers, draughtsmen, engravers, employed in the office. The triangulation the close of 1857 covered an area of 41,000 m.; 27,000 m. of shore line have been surveyed by the plane table; 4,888,885 soundings ave been made, 841 tidal and 783 current staions occupied, 7,000 specimens of the bottom reserved; 675 original topographic, and 559 ydrographic sheets have been surveyed, 876 reduced drawings of the same executed, and 66,576 printed sheets of maps distributed, beside 43,000 now in the hands of sale agents. It is estimated by the superintendent that on the scale of progress of the last 3 or 4 years, the survey of the whole Atlantic and gulf coast will be completed in 12 or 15 years.

COAT OF ARMS, a sur-coat worn by the knights of chivalry over their armor, and embroidered with their heraldic distinctions. It reached to the knee, was open at the sides, and was diversified with bands and fillets of various colors. In common parlance, the term is applied to armorial bearings generally.

COATZACOALCO, a river of Mexico, rising in the Sierra Madre, and flowing N. across the isthmus of Tehuantepec to the bay of Coatzacoalco, in the gulf of Mexico. It is the most important of the streams which water the N. slope of the isthmus, on account both of its numerous tributaries and its extensive basin, and of its position as a part of a projected channel of interoceanic communication. Its source has not been explored; a commission sent out by the United States in 1850 ascended by small boats to the village of Santa Maria Chimalapa, 13 m. below its junction with the Chimalapilla, but the Indians navigate it by rafts 30 or 40 m. beyond. About 45 m. below Santa Maria it receives the Malatengo on the W., and on the same side is also joined by the Sarabia, Jumuapa, and Jaltepec. The last is its principal tributary on the W., and is navigable by canoe 50 m. at all seasons. Below the mouth of this stream the banks of the river are in few places over 10 or 15 feet high, and are often overflowed. The current is scarcely perceptible, and during the dry season shoals are met with having only 18 inches of water over them. At a distance of 95 m. below the Malatengo the river branches, and after forming the island of Tacamichapa, reunites; 7 m. below this it receives the Coachapa; and 4 m. from the mouth of this stream, on the opposite or W. shore, is the village of Minatitlan, the head of sea navigation. From this place to the gulf, a distance of about 20 m., the channel is never less than 12 feet deep, and in some places has a depth of 40 feet. The shores are low and often flooded. At the mouth of the river, which lies in lat. 18° 8′ 20″ N., long. 94° 32′ 50″ W., 115 m. W. of the mouth of the Tabasco, and 143½ m. in a direct line from the harbor of Ventosa, on the Pacific coast of the isthmus, there is a bar, the soundings over which made by order of Cortes in 1520 give the same result as that obtained in 1850. It appears to be of limestone rock, with a light covering of coarse sand, and has 2 passes, one 350 feet wide and 13 feet deep, and the other 100 feet wide and between 11 and 12 feet deep. The breadth of the stream at its mouth is 1,500 feet. Just within the bar is the little village of Coatzacoalco, which has grown up since 1855, and is now frequented by vessels engaged in the mahogany trade.

COBALT, a metal first obtained and thus

named by the Swedish chemist George Brandt, in 1733, from ores which for 2 centuries previously had been used to color glass. They were obtained at mines in Sweden, Saxony, and Bohemia, where they impeded by their abundance the collection of other ores, and received from the miners the name *cobalus*, which they also applied to an imaginary evil spirit. Possibly the arsenical nature of the ores may really have been injurious. At any rate, the ores were regarded very much as miners in our western lead mines regard the useless blende or sulphuret of zinc and the calamine or carbonate of zinc, which they call black jack and dry bone, evidently not holding them in high consideration; but we have not heard of any supernatural influence being ascribed to these, nor of prayers being offered in the churches for protection against the *Kobolds* or spirits connected with the troublesome ores, as was the case in the time of the old German miners. Since the investigations of Brandt, cobalt has been recognized in several metallic combinations, and is found to be present in meteoric stones; but it is not met with as a metal, nor, when this is obtained by the chemical processes required for its separation, several of which are given in the chemical works, is it applied to any useful purpose. When the oxide of cobalt is treated like an ore of iron in making an assay in a brasqued crucible (that is, lined with fine charcoal), the oxide is reduced by the heat of a forge fire, and the metal is obtained combined with carbon, of a gray color, and resembling cast iron in lustre and brittleness. When free from all foreign mixture, the metal is gray with a reddish tinge; it may be run into plates, grains, or small fibres, according to the temperature employed. Prepared from the oxalate of cobalt and fused at a high temperature, it may be run into a button, which is susceptible of a high polish, and has a specific gravity of 8.5, Berthier; about 8, Rose; other authorities, from 7.8 to 9.495. As recently obtained by M. St. Clair Deville, by reduction with sugar charcoal in a lime crucible, it was found to be as ductile as nickel, and exceeding it in tenacity as 115 to 90. It is hence nearly twice as tenacious as iron. Some authorities give to it a greater fusibility than iron, others less. Rose speaks of it as less fusible than gold. It has long been supposed to possess magnetic properties, but this is now disproved by the researches of Faraday. Cobalt is not a volatile metal, and does not undergo any change in dry air. At a red heat in an open vessel it is slowly oxidized, and converted into a dark bluish powder, which changes to black. Its chemical equivalent is 29.5. —Almost the whole interest and importance attached to the compounds of cobalt are due to the property which the protoxide, $Co\,O$, possesses, of giving a blue color to glass with which it is melted. So powerful is this color that one part of it will give a sensible blue shade to 1,000 parts of clear glass, and is perceptible by a slight tint in the proportion of one part in 20,000. The presence in ores of any compound of cobalt is easily detected by the blowpipe, by the blue color given to a bead of borax on a platinum wire. The beautiful pigment called cobalt blue is a combination of the oxide with alumina, made by mixing a solution of a salt of cobalt with one of alum, and precipitating by an alkaline carbonate. The powder thus obtained is to be carefully washed and dried and calcined at a high heat. Thenard's blue is a preparation from the precipitated phosphate, which is of a deep violet color. Two parts of this are added to one part of arseniate of cobalt and 16 parts of alum, and the whole is calcined for some time Combined with magnesia, a fine rose tint is obtained; and the green pigment known as Rinman's is a combination of oxide of cobalt and oxide of zinc. Other salts of cobalt are also employed to furnish colors. The oxide dissolved in hydrochloric acid gives a pink solution, which becomes deep blue when highly concentrated; the nitric acid solution is red. These and the sulphate solutions are used for sympathetic inks; and one that will give a green color when the paper is warmed by the fire, is obtained by adding a salt of nickel to the hydrochloric solution. In the so-called magic landscapes, the sky is painted with the cobalt solution alone, and the foliage with that containing nickel.—The ores of cobalt from which the oxide of commerce is derived are principally the arsenical cobalt or smaltine, the cobalt glance or cobaltine, cobalt pyrites, and the cobalt bloom or arseniate of cobalt. With the exception of the cobalt pyrites, these are more properly ores of arsenic than of cobalt, and they consist almost wholly of these two metals. In the smaltine nickel is most commonly present, taking the place of a portion or sometimes of the whole of the cobalt. This exists as an arseniuret, and rarely exceeds 22 per cent., though in one analysis of a specimen from Schneeberg, 28 per cent. was found. The percentage of arsenic varies from 59 to 76 per cent. Sulphur is present only as a trace. Iron may occur in the proportion of 9 per cent. The color of the ore is tin-white to steel-gray. Its hardness is 5.5–6, and its specific gravity 6.5–7.2. It is found accompanying ores of silver, copper, bismuth, &c., at several mines in Saxony, Bohemia, Sweden, Norway, and also in Cornwall and some other places in Europe. In this country it is found and worked to some extent at Chatham, Connecticut, but the ore yields only from 1 to 2 per cent. of cobalt.—Cobaltine furnishes the largest proportion of cobalt, and is a richer ore of this metal than the preceding. It is a sulpharseniuret of cobalt, its composition represented by the formula, $Co\,As_2 + Co\,S_2 =$ sulphur 19.3, arsenic 45.2, cobalt 35.5. In specimens from Tunaberg in Sweden, 44 per cent. of cobalt has been found. The ore is of the same hardness as smaltine, and by its color it also appears the same; it is sometimes, however, inclined to red; its specific gravity is slightly less than is generally found in smaltine, and the structure is more lamellar; its arsenic

quires a higher heat for its separation.
und at several localities in Sweden, the
roductive mines, worked since 1809, being
a. They are in mica slate. It is also
d in Norway, Silesia, Westphalia, and at
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or sulphuret of cobalt, when unmixed
phuret of copper, nickel, or iron, may
58 per cent. of cobalt and 42 of sulphur.
erage percentage of the analyzed speci-
s from 37 to 53 of cobalt. Its hardness
specific gravity 4.85. A variety called
lite has been found at a copper mine in
l county, Maryland. The ore has also
ound at Mine la Motte, in Missouri, asso-
with a black, earthy cobalt ore, that is
with black oxide of manganese, and
has afforded for some years past a con-
le amount of oxide of cobalt to the Eng-
arket. Mussen, near Siegen in Prussian
halia, and Ridderhyttan in Sweden, are the
al localities.—Cobalt bloom, or the arse-
is a compound of arsenic acid 38.43, oxide
lt 37.55, and water 24.02; the oxide of
often replaced in part by oxide of iron,
r nickel. Its hardness is only 1.5–2.5,
specific gravity 2.98. It is sometimes in
varieties of peach blossom, red, blue,
een colors. Found at many localities in
, and at one copper mine (Prince's Bay),
w worked, on the N. shore of Lake Huron.
repare the oxide of cobalt from these ores,
re first well dressed, or separated by
ng, jigging, and washing, from the earthy
; they are then roasted or calcined to
the greater part of the sulphur and ar-
nd oxidize the cobalt. This is done in
eratory furnaces provided with flues of
length, or with a number of condensing
ers for arresting the arsenical fumes and
this product. It is well to conduct this
ion in the cold of winter, when the fumes
ily condensed and the ground is covered
now, so that the vegetation is protected
e noxious vapors. The ore when dressed,
hile still wet, is spread over the hearth
furnace in a layer 5 or 6 inches thick.
hours it is exposed to a moderate heat,
is is then increased and continued for 16
ours longer, the ore being stirred from
time. From 25 to 30 per cent. of ar-
s collected from good ore. The residue
ing on the hearth is a mixture of the ox-
cobalt and iron, containing some arsenic,
r, and often lead, copper, titanium, and
If poor materials were employed, they
e broken up, sifted, and again dressed and
l. The final product is called zaffre or
and is frequently exported in this con-
to be used in the manufacture of smalt,
the purer blue and prepared oxides of
erce. The annual production of this crude
ial in Saxony is estimated at about 400
in Bohemia, 200; Norway, the same; and
Riesengebirge, Prussia, about 30 tons. From
800 tons of this, beside some 70 tons of
smalt, are imported into England; and at Liverpool and Birmingham particularly a large portion is consumed by the nickel refiners, to produce the oxides that are employed in the potteries and by the glass makers and enamellers to give a blue color to their wares. The zaffre is dissolved in strong hydrochloric acid, and by adding lime water the arsenic and iron are precipitated. These being removed, sulphuretted hydrogen gas passed through the clear liquor separates the copper and other foreign matters. The hydrated oxide is at last obtained by precipitating with chloride of lime. When separated it is heated to redness, and is then the blue oxide; a higher degree of heat makes it the prepared oxide. To manufacture smalt, the zaffre is melted in pots, with pure quartz sand and purified potash, to which a little saltpetre may be added. The proportions to give the desired shade of color are obtained by trial on a small scale. The heat of a glass furnace is required to effect a perfect combination of the materials. The impurities that float are skimmed off. The other metals present, as nickel, iron, arsenic, bismuth, and silver too, form an alloy which sinks to the bottom, and is separated from the cobalt glass. This alloy is called *speiss*. The pure glass, when of such tenacity that it can be drawn out in threads, is ladled out into cold water, and is thus granulated ready for its pulverization. This is effected in granite mills. After being ground some hours, the product is let into vats. The first deposits, which are the richest in cobalt, are called azure. A number of varieties of this are known in commerce by different conventional names and letters. Some varieties are called ultramarine, though they have nothing in common with this substance. The deposits made in other vats into which the liquors are drawn are called farbe; and the last, blue sand or eschel, which contains but little coloring matter. This is also subdivided into different qualities. These varieties of smalt are all combinations of silica, potash, and cobalt, forming a potash glass colored by silicate of cobalt. Some arsenic is usually present in the form of an arseniate of potash; and this, as also traces of some other matters, have an effect, which is sometimes desirable, upon the color of the product.—Smalt is in extensive use as a coloring matter with the manufacturers of porcelain, encaustic tiles, stained glass, pottery, &c. Its first employment for this purpose appears to have been at Neudeck, in Bohemia, by a glassmaker, who collected the beautifully colored specimens at Schneeberg, and tried them in his furnace, about the middle of the 16th century. The discovery gave a new impulse to working the mines, which had become unprofitable, and for the next hundred years its cobalt ores were in good demand at numerous mills erected for their preparation. It is also used in fresco painting, and by paper manufacturers and starch makers. Bleachers and washerwomen use it for giving the finished look to muslins, cambrics, and fine linens.

COBAN, a city of Guatemala, Central America, and capital of the department of Vera Paz, on the Rio Dulce. It is inhabited mostly by Indians, and is said to be one of the wealthiest cities of Central America. Pop. estimated at 14,000.

COBB, a N. W. co. of Ga., bounded S. E. by the Chattahoochee, drained by several creeks; area, 529 sq. m.; pop. in 1852, 15,755, of whom 3,051 were slaves. The general character of the surface is hilly, and some parts are mountainous. The soil is fertile and adapted to grain and cotton. The productions in 1850 were 818,738 bushels of Indian corn, 52,790 of oats, 54,850 of sweet potatoes, 29,531 lbs. of rice, and 2,401 bales of cotton. There were 4 grist mills, 1 saw mill, 1 cotton factory, 2 tanneries, 3 newspaper offices, and 340 pupils attending academies and schools. Value of real estate in 1856, $1,737,682. The rocks of this region are granitic and metamorphic, and produce gold. The Western and Atlantic railroad intersects the county. Organized in 1832, and named in honor of Thomas W. Cobb, formerly U. S. senator from Georgia. Capital, Marietta.

COBB, Howell, an American lawyer and clergyman, born in Savannah, Ga., in 1795. After serving an apprenticeship to the printer's trade, he engaged in teaching for several years in Perry, Houston co., till in 1827 he was admitted to the bar. In 1830 he was elected a senator in the state legislature, and soon after established the "Cherokee Gazette," the first paper printed in the Cherokee district after the jurisdiction of the state was extended over it. In 1836 he was on the electoral ticket, and assisted in casting the vote for Judge White for president and Mr. Tyler for vice-president. In 1845 he published a work on legal forms, and soon after compiled the penal code of the state. At his instance the cotton planters of middle and south-western Georgia have organized themselves into a corporate body, with a view of improving the culture of that staple. He is also a minister of the Methodist Episcopal church, has written many essays for the press, and is the author of a volume concerning the African race, containing curious facts and speculations.

COBB, Howell, an American statesman, secretary of the treasury in the cabinet of President Buchanan, born in Jefferson co., Ga., Sept. 7, 1815. His parents removed when he was young to Athens, Ga., and he was graduated at Franklin college, in that city, in 1834. He soon after began the study of the law, to the practice of which he was admitted in 1836, and in 1837 he was elected by the legislature solicitor-general of the western circuit. During the period of 3 years for which he held this office he obtained a lucrative practice, and displayed social qualities and mental ability which gained for him great personal popularity in his constituency. He began his congressional career in 1843, having been elected to the house of representatives, in which, by 3 successive re-elections, he sat till 1850. He at once applied himself to the study of the rules of the house, from his familiarity with which, and with the duties which they impose, he has constantly derived advantages in parliamentary encounters. An enthusiastic admirer of Gen. Jackson, from whom, in the period of South Carolina nullification, he had imbibed profound sentiments of attachment to the federal union, his political faith has been equally marked by devotion to the stability of the confederacy, and to the guaranteed rights of the individual states. In the 30th congress he was one of the most efficient defenders of the measures of President Polk's administration relative to the Mexican war, and secured by his boldness and ability the position, rarely accorded to so young a statesman, of being leader of his party. A prominent supporter of Gen. Cass for the presidency in the canvass of 1848, he was placed in opposition by the election of Gen. Taylor; but upon the assembling of the 31st congress in Dec. 1849, he was elected speaker of the house of representatives. While the question of slavery in the territories divided his political friends, and while the executive department of the government was held by his political opponents, his official position was one of great responsibility and difficulty. Though bearing no very conspicuous part in the passage of the compromise measures of 1850, he was indefatigable, by argument and persuasion on private and social occasions, in urging the settlement which was finally adopted. The measures were opposed by many of his party, and a political organization was formed in many of the southern states on the basis of hostility to them. Georgia at once became the battle-ground of the southern rights party and the union party, by the latter of which Mr. Cobb was nominated for governor. After a violent canvass he was elected by the largest majority ever given in Georgia in any political contest. The term was for 2 years, at the end of which he resumed the practice of law, saw the compromise measures approved by the national democratic convention of 1852, took an active part in the political contest which resulted in the election of Gen. Pierce to the presidency, and in 1855 was again chosen to represent his constituency in congress. In the presidential campaign after the adjournment of the 34th congress, he visited several of the northern states, vindicating the policy of the democratic party, and advocating the election of Mr. Buchanan, one of whose earliest acts after his accession was to tender to Mr. Cobb the secretaryship of the treasury.

COBB, Nathaniel R., a philanthropic American merchant, born in Falmouth (now Westbrook), Me., Nov. 3, 1798, died in Boston, May 22, 1834. In 1814 he went to Boston, and entered a mercantile house as clerk. He commenced business for himself in 1819, and in 1821 composed and signed the following document: "By the grace of God, I will never be worth more than $50,000. By the grace of God, I will give ¼ of the net profits of my business to charitable and religious uses. If I am ever

$20,000, I will give ½ of the net profits;
I am ever worth $80,000, I will give ¾,
whole after $50,000. So help me God, or
a more faithful steward, and set me aside."
covenant he is said to have adhered
, and having been successful in business,
away before his death at least $40,000.
of a very religious turn of mind, and
mitted to the Baptist church in 1818.

B, THOMAS R. R., an American lawyer,
Jefferson co., Ga., in 1820. He was
ted at the university of Georgia in 1841,
n after admitted to the bar, and was re-
of the supreme court of Georgia from
1857, when he resigned the office. In
published a new digest of the laws of
, and in 1858 an "Inquiry into the Laws
ro Slavery." He is a trustee of the uni-
and actively interested in the cause of
on in Georgia, and has also a high repu-
nd large practice as a lawyer.

B, THOMAS W., an American statesman,
n Columbia co., Ga., in 1784, died at
sborough, in 1830. He was the son of
Cobb, who emigrated from Virginia.
tudying law in the office of William H.
rd, he settled at Lexington, Ga., and rap-
tinguished himself at the bar. He was
a representative to congress in 1816, and
n 1823, and in 1824 was chosen to the
enate. This office he resigned in 1828,
e became a judge of the superior court.
te admirable political essays, and was an
and argumentative debater, one of his
tive speeches being on the policy of Gen.
n the Florida campaign. He united with
of Virginia and Clay of Kentucky in ad-
g a vote of censure on the general. He was
minent in the debates in 1819 on the Mis-
estion.—JOSEPH BECKHAM, son of the pre-
an American politician and author, born
thorpe co., Ga., April 11, 1819, died in Co-
, Ga., Sept. 15, 1858. After being educated
ington, S. C., and at Franklin college, in
, Ga., he removed in 1838 to Noxubee
s. He devoted himself chiefly to literary
s, contributing his first productions to
son's National Magazine," and in 1848
ed a novel entitled the "Creole," which
n followed by a volume of miscellaneous
s. In 1851 he was elected by the whig
o the state convention, and was subse-
during several sessions a member of the
enate, and in 1853 an American candi-
r Congress. He was a frequent contrib-
political essays to the "American Re-
and in 1858 his last work, entitled "Lei-
urs," was published in New York.

BETT, WILLIAM, an English political
born at Farnham, in Surrey, England,
9, 1762, died near Farnham, June 18,
His father, who for many years kept the
armers at Farnham, and farmed a piece
l in the neighborhood, taught him read-
riting, and arithmetic, and employed
the fields from early boyhood. At the age of 20 he vainly endeavored to enter the navy. In the following year he made his way to London, where he became copying clerk in an attorney's office, the duties of which he found so irksome, that he enlisted in the 54th infantry regiment, in his 21st year. He was sent to Chatham, where he remained for 12 months, during which time he read a great deal, particularly studied grammar, and rose to the rank of corporal by the time he was 22. Accompanying his regiment to New Brunswick, his good conduct during the following 3 years was such that at the age of 25 he was promoted, over 30 sergeants, to the rank of sergeant-major. The regiment returned to England in 1791, after which, at his own request, he obtained his discharge, with excellent testimonials from the celebrated Lord Edward Fitzgerald, and other of his superior officers. On Feb. 5, 1792, he married at Woolwich a daughter of Thomas Reid, sergeant-major of artillery, with whom he was acquainted in New Brunswick. Soon after, they went to France, where he wished to learn the language, but on account of the revolution returned to England in 6 months, and lost no time in going to the United States. At Philadelphia, under the name of "Peter Porcupine," he wrote several political pamphlets, very much in favor of England, and opposed to French principles. He opened a shop for the sale of his own compositions, among them one upon which Dr. Rush, attacked in it with much severity, took the sense of a jury, and obtained a verdict of $5,000 damages. In 1800, Cobbett returned to London, opened a book shop in Pall Mall, published the "Works of Peter Porcupine," in 12 vols. (of which the sale was very great), and established a daily paper called the "Porcupine," in which he strongly supported Mr. Pitt's administration. This journal was short-lived, and, on stopping it, Cobbett commenced the "Weekly Political Register," the publication of which was continued, without interruption, to his death. The sale of the "Register" became so large, from his strong attacks on the government, said to be caused by some slight from Mr. Pitt, that Cobbett was soon enabled to acquire Botley, a large farm in Hampshire, where he resumed a country life, giving a few hours daily to his editorial duty. Writing with as much fearlessness as force, he was prosecuted and convicted for various libels on the government and individuals. In July, 1810, he was convicted of a libel, for denouncing the flogging of English militiamen by German soldiers, and sentenced to two years' imprisonment in Newgate, with a fine of £1,000. The money was raised by subscription, but he had to suffer the full sentence of imprisonment, and though he continued to write in prison (among other productions, his famous currency book, "Paper against Gold"), his income suffered greatly. He never forgave the government. In 1816 he began an occasional publication called "Two Penny Trash," whose sale rose to 100,000 copies. Its influence with the working classes was so great that the "six

acts" were passed in 1817, for the express purpose of preventing public meetings, and of silencing the independent press. Cobbett instantly retreated to the United States, dating his future "Registers" from Long Island, where he leased a farm, until the repeal of the particular statute which he feared might be put in force against himself. Returning in December, 1819, he added more to his notoriety than popularity by bringing with him, on the ground of his having been a great financial writer, the bones of Thomas Paine. He had formerly denounced Paine as a regicide and infidel, and now vainly urged the English people to give him a grand funeral and a splendid monument. In 1820, during the prosecution of Queen Caroline, wife of George IV., for adultery, Cobbett is said to have been her secretary, writing her replies to numerous addresses, as well as her celebrated and powerful letter to the king. He now took a farm at Kensington, where he endeavored to grow American trees and plants, Indian corn included, which he thought might be useful to England. In the following 10 years he wrote a great many books, each of which obtained a large sale. Most remarkable among these are his "History of the Protestant Reformation in England and Ireland," with such a Roman Catholic bias that it has been translated into French and Italian; English and French grammars, written with great clearness; "Advice to Young Men and Women," containing many charming snatches of autobiography; "Treatise on Cobbett's Corn;" "Emigrant's Guide;" "Cottage Economy;" "Village Sermons;" "A Year's Residence in America;" "History of England," &c. He also edited various other books. Early rising, temperate living, concentrated industry, and health preserved by much out-door exercise, enabled him to get through a greater quantity of brain-work than any other author of his day, Scott not excepted. Beside the weekly writing of his "Register," he compiled 20 volumes of parliamentary debates. He strongly condemned the currency views of Peel, and as strongly advocated Catholic emancipation, granted in 1829, and parliamentary reform, completed in 1832. In July, 1831, while the reform excitement was agitating England, the whig ministry were so indiscreet as to bring Cobbett to trial for what their attorney-general (Denman) described as a seditious libel, exciting agricultural laborers to destroy corn, machinery, and other property. Cobbett, who conducted his own defence, made a very damaging attack on the whig government. After 15 hours' deliberation, the jury, equally divided in opinion, could not give a verdict, and were discharged, which ended the trial—a triumph to Cobbett, a defeat to the ministry. At Coventry in 1820, and at Preston in 1826, Cobbett had unsuccessfully attempted to be returned to parliament. In Dec. 1832, chiefly through the influence of Mr. John Fielden, a resident wealthy manufacturer of that borough, Cobbett was elected to parliament for Oldham. In the following session he moved resolutions on the currency, in which there was personally offensive mention of Sir Robert Peel. Not only was his motion negatived, but the commons ordered them to be discharged from their minutes. He made no impression in parliament, and had no influence. He had passed his 70th year before entering that arena. At the general election in Dec. 1834, Mr. Cobbett was again sent to parliament by Oldham. Unaccustomed labor, performed at late hours in a heated atmosphere, soon told upon a man far advanced in age, whose previous boast had been that he rose at 4 and went to bed at 9. He had a sudden attack of disease of the heart during a debate on the malt tax, on May 25, 1835; was removed to his country residence near Farnham, and survived only 3 weeks. He was buried, by his express wish, in the churchyard of his native town, by the side of his father and mother. In 1856 a tomb of durable stone was erected over the slab which had hitherto covered Cobbett's grave. His wife died in London, July 19, 1848. As a politician, Cobbett was unstable and inconsistent, but always wrote with great power. As an author, he stands very high. Southey declared that there never was a better or more forcible English writer. The nervous simplicity of his style, as well as the great amount of information which they contain, makes his books so extremely useful, that the sale continues large to this day. In public, Cobbett's pen seemed almost against every one. In domestic life he was a faithful husband and most affectionate and indulgent parent. In 1842 Cobbett's son published, in 6 volumes, with notes, a selection from his political works. In 1848 this was extended to 9 volumes.—JOHN MORGAN COBBETT, a barrister, the principal editor of the above-mentioned publication, has represented Oldham since June, 1852. He holds liberal opinions and was an unsuccessful candidate for Coventry in 1833, for Chichester in 1835, and for Oldham (on his father's death) in 1835, and again in 1847.

COBDEN, RICHARD, an English politician, born at Dunford, near Midhurst, Sussex, in 1804. On the death of his father, a small farmer, Mr. Cobden was taken charge of, while yet young, by his uncle, a warehouseman in London. Gradually rising, by ability and steadiness, ere he entered business on his own account he saw much of England, as a commercial traveller. In this capacity he visited Egypt, Turkey, and Greece, in 1834, and the United States in 1835. By this time he had become partner in a cotton-printing establishment near Manchester, and built up a prosperous business. In 1835 he pronounced the leading address at the opening of the Athenæum of Manchester, which he had helped to establish. At this time he published two pamphlets, "England, Ireland, and America, by a Manchester Manufacturer," and "Russia." In the latter, he questioned the extent of the vast resources generally attributed to Rus-

In 1837, after having unsuccessfully con-
ted the representation of the borough of
ckport, Mr. Cobden visited France, Belgium,
l Switzerland. In 1838 he travelled through
rmany, returning strongly and avowedly in
or of free trade. In 1839, when the house
commons rejected Mr. C. P. Villiers's motion
the repeal of the bread tax, Mr. Cobden took
ading part in establishing the well known
l powerful anti-corn-law league. He was
cted for Stockport in 1841, commencing his
itical career in the first year of Sir Robert
el's second administration. Mr. Cobden im-
diately obtained a high place among the lead-
parliamentary speakers, from his oratorical
lity and from the great extent and variety of
knowledge upon all subjects connected with
de and commerce. In parliament he spoke
l voted for the repeal of the corn laws, and
ke and lectured in most of the counties of
gland on the same subject. Meanwhile the
i-corn-law league grew into power and popu-
ity, strengthened, too, with vast funds raised
the free traders. Sir R. Peel finally became a
ert to the necessity of a change, and, with
ch opposition from the agricultural interest,
ceeded in procuring the passing of the mem-
ble act for repealing the duties on the im-
tation of corn, to which the royal assent was
en June 26, 1846. Driven out of power im-
diately after by a hostile vote on his Irish
icy, Peel took leave of office in a speech
ich contained a handsome acknowledgment
t the repeal of the corn laws was chiefly at-
butable to Mr. Cobden. National gratitude
rtly after presented Mr. Cobden with a sub-
ntial pecuniary acknowledgment, raised by
scription, to the amount of $350,000, on the
eipt of which he retired from business, and
chased the property near Midhurst on which
had been born, and which his family had
merly owned. While absent in 1846–'7 on
ontinental tour through France, Spain, Italy,
rmany, Russia, and Sweden, Mr. Cobden
s reëlected member of parliament for Stock-
t, and also for the West Riding of Yorkshire.
decided to sit for the great county rather
n for the small borough. He was reëlected
1852. As an active member of the peace
iety, he had advocated the propriety of de-
ing national disputes by arbitration rather
n by arms, and had published several pam-
lets strongly urging these views. He dis-
intenanced the war with Russia, which his
nstituents supported. In 1857 he was one
the majority which passed a vote of cen-
re on Lord Palmerston for entering into the
r with China, which caused his rejection
the electors of the West Riding. He con-
ues (Dec. 1858) out of parliament, but his
urn to the arena of politics would now ap-
r to be certain, whenever he pleases. Mr.
bden, to a certain extent, is a self-taught
n, but his extensive reading and travel
ve filled his mind with varied information.
politics, he belongs to the extreme liberal
party, of which Mr. Bright is now the parliamentary leader.

COBI, Desert of. See Gobi.

COBIA, Daniel, an American clergyman, born in Charleston, S. C., Sept. 13, 1811, died there, Feb. 8, 1837, entered the general theological seminary of the Protestant Episcopal church, in New York, in 1830. After graduating at Charleston college, he finished the regular course in 1833, became in 1834, while deacon, assistant minister over St. Philip's church in Charleston, and was ordained priest in 1835; but illness soon obliged him to desist from his labors. His discourses and occasional literary efforts were collected in a volume after his death.

COBIJA, or Puerto de la Mar, a small town of Bolivia, on the Pacific, capital of the department of Atacama or Cobija, the only legal seaport of that country; pop. 2,000. It is a wretched place, and until the recent discovery of a spring, was destitute even of good water. Its harbor, however, is much visited by vessels of various nations, and the roads leading to the interior of the country are constantly traversed by beasts of burden, employed in bearing to the port corn, bullion, ore, and some other productions, and in distributing among the different villages the paper, mercury, cotton and woollen stuffs imported from France, Great Britain, and other countries. In 1853 the export of specie amounted to $777,630, of guano to 20,460 tons, and of copper to about 500,000 cwt.; the value of the imports was $1,850,000. Entrances in 1853, 58 vessels, tonnage 12,275; clearances, 58, tonnage 8,470. Ship-building is carried on to some extent, and there are a number of mining establishments.

COBLENTZ (anc. *Confluentes*), the fortified capital of the Prussian province of the Rhine, and of a circle of its own name, situated at the confluence of the Rhine and Moselle; pop. exclusive of the garrison, 22,500. A Gothic freestone bridge of 14 arches and 1,100 feet in length, erected in the 14th century, crosses the Moselle; and one of boats, 485 yards long, across the Rhine, leads to the fortress of Ehrenbreitstein, on the opposite bank. The fortifications are constructed partly on the system of Carnot, partly on that of Montalembert, and are capable of accommodating 100,000 men. Among the public buildings, the church of St. Castor is notable as the place where in 843 the grandsons of Charlemagne met to apportion the empire. An active trade is carried on in colonial produce, corn, iron, potters' clay, mineral waters, bark, and chiefly sparkling Rhine and Moselle wines. Manufactures also flourish to some extent. The town consists of the old and the new, or Clement town, the last being the most pleasant. During the French revolution the *émigrés* made their head-quarters at Coblentz; many of them settled permanently in the town, which consequently contains more infusion of French blood than perhaps any other Rhenish town. Prince Metternich, Prof. Görres, and Henrietta Sontag were born in Coblentz.

COBOURG, or Coburg, a town and port of entry, and the capital of the united counties of Northumberland and Durham, Canada West. It is situated on Lake Ontario, at the junction of two railways, one of which connects it with Peterborough; the other (the Grand Trunk railway), extending along the N. shore of the lake, opens a communication between Montreal and the railroads of the western parts of the United States. Cobourg is the seat of Victoria college, an institution which in 1851 numbered 4 professors and 50 students. A branch of the Montreal bank, a savings bank, insurance agencies, 2 newspaper offices, and a number of churches of various denominations, are also located in the town. The principal manufactures are steam engines, iron castings, machinery, woollen goods, soap, candles, &c. The value of imports in 1851 amounted to $142,376, of which $125,464 were from the United States. The exports amounted to $71,612, all to the United States. The exports in 1857 were 7,000 bbls. of flour, 200,000 bushels of wheat, 500 kegs of butter, and 14,000,000 feet of sawn lumber. Pop. in 1858, about 7,000.

COBRA DE CAPELLO (hooded snake), the Portuguese name of the *naja tripudians* (Merr.), a venomous serpent of the East Indies, so called from its habit of dilating the neck into a kind of hood, covering in part the head; it has also received the name of spectacle snake, from the peculiar coloration on the back of the dilated hood. The family to which this serpent belongs seems to establish the transition between the genus *coluber* and the true venomous serpents; for though armed with poisonous fangs, they have not the external characters of *trigonocephalus*, *crotalus*, and *vipera*, such as heavy forms, large triangular heads, and carinated scales; on the contrary, the form is slight and graceful, the head small and rounded, and the scales smooth; like *coluber*, they have the top of the head covered with 9 plates. The poison apparatus is less developed than in the rattlesnake, and its excretory duct is shorter and unfolded; the long processes of the vertebræ are smaller and indicate less muscular strength than in the true venomous serpents; the bones of the head are less movable, the fangs are fixed in the jaws, which are capable of only moderate extension, and the whole aspect indicates a gentleness and docility which it is well known they possess. The cobra de capello has been known for centuries as possessing the power of dilating its neck, which is marked in a peculiar manner, and as being the dangerous playmate of the Indian jugglers. The dilatation of the neck depends on the length and straightness of the ribs of this part; at rest, they are directed backward, but when drawn forward they assume a horizontal direction, and thus spread laterally the integuments of the neck; this dilatation extends from the head to about the 10th vertebra, gradually diminishing upward and downward from the middle of this space. This power of dilatation is possessed by many other serpents to a less degree. The two white spots with a black centre, united in front by a curved line, are rarely so distinct as to resemble "spectacles," being generally irregular black marks which the imagination could transform into a great variety of semblances; they are most distinct when the hood is dilated, and are probably due to the arrangement of the scales consequent on the forward raising of the ribs. Two spots are sometimes seen on the lower surface of the neck. These colorations are not sexual differences, as they occur both in males and females. The general color of this serpent is a brownish yellow, of various degrees of brightness; the young often have the body with black bands and white spots. The total length is from 3 to 4 feet, and the thickness a little more than an inch; the tail is short, robust, and conical; the trunk is cylindrical and strong, as indicated by the agility of its movements. When attacked, it raises itself boldly, supporting the trunk on the tail placed horizontally on the ground; then, with body bent, dilated neck, and threatening head, it presents quite a formidable appearance. It devours toads, frogs, birds, small animals, and also other snakes. In confinement they often utter a peculiar cry, described by a traveller, in whose apartment one of these snakes was catching rats at night, as a "strident sound, the attempted imitation of which resembled the acute staccato note of a treble hautboy." This species is found throughout the East Indies, and on many of the islands of the Indian archipelago, varying somewhat in color according to locality; it is nocturnal in its habits, and very frequently enters houses in search of its prey. The specific name *tripudians* given to it by Merrem indicates a frequent use made of it by the Indian jugglers, to the great surprise of the uninitiated; the poison fangs are first extracted, so that their bite is quite harmless, though the exhibitors pretend to employ powerful antidotes; the serpents are trained to execute certain movements corresponding to the motions of the jugglers, keeping time to the musical accompaniment, and resembling a rude dance. The poison of the cobra, though less virulent than that of the rattlesnake, is exceedingly dangerous; from the experiments of Dr. Russell, in his work on the serpents of India, it appears that its poison does not prove fatal to a dog in less than 27 minutes, and to a chicken in less than half a minute; inserted by incision or inoculation, it is equally dangerous. Unless remedies are speedily applied, the bite of the cobra is generally fatal to man. According to Dr. Davy, its poison has an acrid taste, paralyzes the iris of fowls when applied to their eyes, and is soon exhausted by biting; it produces fainting, coldness, convulsions, and death, the lungs being generally found gorged with blood and serum. After the mechanical means of removing the poison have been tried, such as ligatures above the wound to prevent the return of venous blood, sucking the bitten part, excision, cauterization, or the application of cupping glasses, the constitutional remedies are, in the first

e stimulants, to support the pros-
ous energy which invariably accom-
bites; such are ammonia alone, or, as
e, in combination with tincture of oil
or even simple alcoholic stimulants in
repeated doses, which have been found
t the fatal effects of the more virulent
the rattlesnake. The favorite remedy
t Indies is arsenic, either in the famous
ills. each of which contains about one
ic, or in Fowler's solution, which
arsenite of potash; ample experi-
own the efficacy of the pills in cases
by Dr. Russell, where no other remedy
oyed, and they would doubtless prove
ial in the bites of other venomous ser-
his cobra has received a number of na-
s, one of the most common of which
The *N. haje* (Linn.), found in
d also in southern Africa, has some-
erroneously called cobra de capello,
t lead to the supposition that the
of this name extended its area of
into Africa.

AS, an island and fort in the bay of
iro, Brazil. The fort, which is about
nt from the city of Rio de Janeiro,
the principal defences of that place,
f holding 1,000 men, and mounts 100
t is also used as a state prison.

RG, a German duchy, situated on the
Thuringian forest, and on the N. fron-
avaria; mountainous, rich in forests,
valleys and well cultivated soil. It is
from Gotha by the duchy of Saxe-
Since June 14, 1852, the duchy of
as been politically united with that of
Pop. of Gotha in 1855, 106,411; of Co-
467; total pop. 150,878, all Protest-
the exception of 2,300 Catholics and
vs. Grain, flax, and timber are the
ducts. In the mountainous parts of
tch, tar, and lamp-black are made.
e manufactories of linen, woollen
lery, porcelain, and wooden toys, iron
, and an important beet-root sugar
t Gotha. The duke has one vote in
al assembly of the German diet, and
of March 10, 1853, is bound to fur-
ntingent of 1,860 men to the forces of
deracy. The founder of the present
e-Coburg-Gotha was John Ernest, the
Ernest the Pious, who died in 1729.
ipality of Lichtenberg, on the Rhine,
o Coburg by the congress of Vienna,
by the late duke to Prussia in 1834.—
he capital of the above-described duchy,
tely with Gotha, the residence of the
me seat of the government, pop. in 1855,
surrounded with fine parks, and pleas-
ated on the left bank of the Itz. It has
an arsenal, 5 churches, of which that
rice is the most important, a gymna-
rmal school, a mining academy founded
n orphan asylum, a deaf and dumb and
nevolent institutions, an observatory,
2 public libraries, and a cabinet of natural history. The ducal palace, Ehrenburg, a Gothic edifice erected in 1549, has been newly fitted up. The ancient castle of the dukes of Coburg, which has been of late partly converted into a house of correction and a lunatic asylum, situated on a commanding eminence in the vicinity, was for some time in 1530 the residence of Luther, and the bedstead on which he slept, and the pulpit from which he preached in the old chapel, are still shown.

COBURG FAMILY, a family of sovereign German dukes, originating in the 15th century, now celebrated for intermarriages with European royal families. The sister of the late duke Ernest I. of Coburg, who died in 1844, is the present duchess of Kent, the mother of the queen of England; and his brother Leopold, whose first wife was a daughter of George IV. of England, and his second wife a daughter of Louis Philippe, is the present king of the Belgians; while Albert, son of Duke Ernest I., and brother of the reigning duke of Coburg, Ernest II., is the consort of Queen Victoria. One of the nephews of Ernest I., Ferdinand, was consort of the late queen of Portugal, and after her death (1853) for some time regent of the kingdom; and another, August, married Marie Clementine, a daughter of Louis Philippe, while his niece, Victorie, is the wife of the duke of Nemours.

COBURG-SAXE, Josias, prince of, an Austrian field marshal, born Dec. 26, 1737, died Feb. 26, 1815. In 1788 he commanded the Austrian army against the Turks, and after the conquest of Chocim, and the victory at Foktchany, he entirely routed the Turks near Martinestie, and took possession of the greatest part of Wallachia, including Bucharest. In the wars with France in 1793 and 1794 he took also a successful part, and assisted in reinstating Austria in the possession of Belgium; but eventually he was defeated at Maubeuge and Fleurus.

COBWEB, the delicate silken thread woven by the spider, and applied to various uses by the different species. Some form of it webs in which to entangle their prey, others use it as a lining for their habitation, and others make with it a soft nest for their eggs. Each thread which we see with the naked eye is formed of thousands of minute strands, which, coming separately from the body of the spider, unite at a short distance from it, not by twisting, but by their glutinous nature. The webs of different species of spiders are of various construction, adapted to the nature and habits of the creature. Some are very remarkable for their tenacity, being sufficiently strong to catch small birds. Sir George Stanton, in his "Embassy to China," states that spiders' webs are met with in the forests of Java of so strong a texture as to require to be cut through with a knife. In the "American Journal of Science," vol. xxvii., p. 307, is an account of a live striped snake suspended in a web by the tail, which was tied in a knot. Three spiders appeared to have accomplished this feat, having spun a cord of great size to connect the snake with the centre of the web above.—They had also securely tied up the mouth of the reptile by a multitude of threads wound around it. The white, silky substances seen floating in the air during the spring and autumn mornings, are without doubt produced by small spiders, as also the innumerable threads scattered over the fields, glistening in the sunlight.—Cobwebs have been applied to various uses, both in the arts and in medicine. The delicate cross hairs in the telescopes of surveying instruments are fine webs taken from spiders of species that are especially selected for the excellent quality of this material which they produce. The spider, when caught, is made to spin his thread by tossing him from hand to hand, in case he is indisposed to furnish the article. The end is attached to a piece of wire, which is doubled into two parallel lengths, the distance apart exceeding a little the diameter of the instrument. As the spider hangs and descends from this, the web is wound upon it by turning the wire round. The coils are then gummed to the wire and kept for use as required. Nearly a century ago, Bon of Languedoc succeeded in making a pair of gloves and a pair of stockings from the thread of the spider. They were very strong, and of a beautiful gray color. Other attempts of the same kind have been made; but Réaumur, who was appointed by the royal academy to report on the subject, stated that the web of the spider was not equal to that of the silkworm, either in strength or lustre. The cocoons of the latter weigh from 3 to 4 grains, so that 2,304 worms produce a pound of silk; but the bags of the spider when cleaned do not weigh above the third part of a grain, so that a single silkworm can accomplish the work of 12 spiders. It is affirmed that the web of the common house spider has great medical virtue in tranquillizing the nerves and inducing sleep, while that of the field spider is inefficacious. It is also beneficial in intermittent fever, asthma, hysteria, and other affections over which the imagination has power. The dose is from 5 to 6 grains in the form of a pill, frequently repeated. It is superior as a tonic to bark, quinine, and arsenic, and is an excellent application for fresh cuts, wounds, &c.

COCA, the dried leaf of the shrub *erythroxylon coca*, or, as in Prescott's "Peru," "*erythroxylum Peruvianum*, or *cuca*, as called by the natives." This plant is found wild in the mountainous regions of Peru and Bolivia, and is cultivated in districts elevated from 2,000 to 5,000 feet above the sea. It is valued for its stimulating narcotic properties, which it is said to possess in a greater degree than opium, tobacco, or any other vegetable production. The leaves are gathered and dried in the sun, and are chewed mixed with quicklime, which the Peruvians affirm renders its flavor sensible to the taste. In the same way the leaf of the betel nut is used by the East Indians. As described by Pöppig, in the 2d vol. of his *Reise in Chile und Peru*, published in 1835, the practice of chewing the leaf is attended with the most pernicious consequences. It produces an intoxication like that of opium. The individual under its influence wanders away into the woods, and remains for days heedless of exposure to storms and deprivation of food. As the indulgence is repeated, the appetite for it increases, and the power of resistance diminishes, until at last death relieves the miserable victim of physical and mental disease. He describes the aroma exhaled from heaps of freshly dried leaves as so powerful in its effects, that persons unused to its properties suffer from severe headaches, if they fall asleep near them. The cultivation of the plant gives employment to thousands of people, and the annual production in Peru and Bolivia, he estimates, exceeds $2,500,000 in value. Prescott found no authorities confirming these strong statements as to its effects. He speaks of the coca as an article of so invigorating a nature that "with a small supply of it in his pouch, and a handful of roasted maize, the Peruvian Indian of our time performs his wearisome journeys, day after day, without fatigue, or at least without complaint. Even food the most invigorating is less grateful to him than his loved narcotic. Under the incas it is said to have been exclusively reserved for the noble orders. If so, the people gained one luxury by the conquest; and after that period it was extensively used by them that this article [illegible] stituted a most important it[illegible] of the [illegible] revenue of Spain. [Pöppig sta[illegible] was collected in 1583, at Potosi, [illegible] for one year.] Yet with the soothing [illegible] of an opiate, this weed, so much [illegible] the natives, when used to excess [illegible] attended with all the mischiev[illegible] habitual intoxication." The sta[illegible] public by Dr. Thomson, in his "Cyclop[illegible] Chemistry," of his friend Mr. Whittall, [illegible] confirms the account of its giving w[illegible] powers of endurance, the Indians under [illegible] fluence working 20 and 30 hours at [illegible] without sleep. They travel on foot f[illegible] to Chuquisaca, 70 leagues, in 3 days, [illegible] little food, but chewing constantly [illegible] carrying it in a small bag over their [illegible] together with a bottle of quicklime. Th[illegible] ers of this country, mostly Indians, [illegible] ed with provisions by their emp[illegible] thing, excepting coca, in limited qua[illegible] this they are supplied with all [illegible] Some consume of it a pound a week, [illegible] reals (75 cents); or, if cultivated by [illegible] prietors, about 4 reals. The chewi[illegible] according to Mr. Whittall, "ultima[illegible] the user to as miserable an end as [illegible] craving taste for it is acquired; [illegible] qualities dry up the system; its victims [illegible] ually lose all energy, become par[illegible] cannot exist without it." Its i[illegible] been used as a substitute for tea, [illegible] half a dozen people being made [illegible]

These are first treated before steeping
ittle hot water, to draw off the acidity.
ittingham, surgeon, practising in Callao
, thus used them; and he also furnished
unt to Mr. Whittall, of 2 men being
n a mine 11 days before they could be
t, during which time they were kept
y the small amount of coca they had
em, and the raw hide of their sandals.

EIUS, Johann, a German Hebraist,
l name was Cock or Koken, born
in 1603, died in Leyden, Nov. 5,
e was professor of Hebrew and the-
the latter city, and wrote voluminous
taries on the Bible, and numerous other
He was the founder of a mystical sect
d the name of Cocceians.

LUS, the fruit of a climbing plant,
y Linnæus *menispermum cocculus*, im-
from the East Indies. It is about the
a pea, and somewhat resembles the bay-
aving a dry, wrinkled exterior coat,
which is a shell enclosing a bitter, oily
The bitter principle, called picrotoxin,
cted by triturating the seeds with pure
. and treating them with hot alcohol.
t pure, it is again dissolved in alco-
d with animal charcoal. After
ration, it is deposited in crystalline
In India, in Europe, and in the United
he *cocculus Indicus*, ground into a coarse
, is used to intoxicate fish, that they may
easily caught. It is sometimes added to
uors, to increase their stupefying quali-
t is never given internally, but an oint-
de from it is used in the East Indies as
application in obstinate cutaneous
. A strong tincture of the fruit, rubbed
scalp of a child, has been known to
fatal results.

HABAMBA, a department of Bolivia,
capital of the same; area of the former,
sq. m., pop. 283,000; pop. of the latter,
The principal productions of the de-
nt are cotton, sugar, dye woods, timber,
precious metals. The city of Cocha-
is built on an extensive plain, on both
the Rio de Rocha, which, like the Tam-
that joins it just below, is apt to over-
the rainy season, but is almost dry dur-
rest of the year. The houses, generally
story high and surrounded by gardens,
ead over a great space. In the middle
ity is a grand plaza, around which stand
es (beside 11 churches in other parts
city) and the *cabildo* or government
The prevailing language is the Quichua;
anish is spoken only by persons of rank.
amba, standing in a beautiful valley and
to agriculture, has not only escaped the
which has overtaken other Bolivian
but has continued to prosper and in-
The women of Cochabamba highly dis-
ed themselves during the war of South
an independence in 1815, by their daring
riotism.

COCHIN, a rajahship of India; area 1,988 sq. m. It is comprised in the Travancore dominions, and extends along the Malabar coast. Magnificent forests of teak and other woods cover a great part of the surface, and are the source of most of the revenue of the country.—Cochin, the capital, is situated at the entrance of an extensive backwater on the Malabar coast. It has superior advantages for ship-building, and although it has declined in importance during the present century, it still exports to eastern and western Asia teak timber, cardamoms, and coir. The first Portuguese fort in India was erected here in 1503. The town was taken from the Dutch in 1795, and ceded to Great Britain in 1814.

COCHIN, Charles Nicolas, a French engraver and designer, born in Paris in 1715, died April 29, 1790. He was hardly less eminent as a man of letters than as an artist, and published several volumes of travels and art criticisms. His engravings, numbering upward of 1,500, are executed with great taste and skill.

COCHIN CHINA. See Anam.

COCHINEAL (*coccus cacti*), an insect used as a dye. Other species of the same genus of hemipterous insects have been used from the remotest periods to afford the material of the brilliant scarlet and crimson dyes of the ancient Hebrews, Egyptians, and the people of other eastern nations. The *coccus ilicis* is one of these, still found in the Levant, Greece, Palestine, Persia, &c., on a species of oak, in which countries it is employed as it was before the time of Moses. It has long been known by the name of kermes, which came from the Arabs, and signifies red dye. Beckmann, who has made a thorough investigation of the early history of this article, and of the etymology of the terms connected with its use, conceives that the ancients obtained a finer color from the insects than from Tyrian purples, and its introduction among the Romans caused the use of the latter to be abandoned. The name cochineal, which Beckmann suggests is the diminutive of the Spaniards for *coccus*, is limited to that species which came to the notice of Europeans soon after the conquest of Mexico. The Spaniards found it in high estimation among the natives, who "took infinite pains to rear the insect on plantations of the cactus; and it formed one of the staple tributes to the crown from certain districts." ("Conquest of Mexico," vol. ii. p. 136, note.) The Mexican coccus was soon introduced into Europe, where its superior quality was immediately appreciated. Even the live insects were imported, and plantations of cactus were cultivated for their nourishment. The French and Spanish kermes, which at that time was in high repute, disappeared and was soon entirely forgotten.—The *coccus cacti* is a small insect with the body wrinkled transversely; its abdomen of a deep mulberry color, and bristly in the posterior part; the legs are short and black, the antennæ subulate and about ½ the length of the body. The male has two erect wings, the female none. The principal district in which they are reared is in the province of Oaxaca, those of the district of Mestique being considered the best insects. There are plantations of the nopal (*opuntia cochinellifera*) upon which they feed, the insects being tended with care equal to that ordinarily bestowed upon silkworms. Before the rainy season sets in, branches of the nopal covered with insects are cut off and brought under shelter to protect them from the weather. At the close of the wet season, about the middle of October, the plantations are stocked from these supplies by suspending little nests made of some soft woody fibre, each containing 8 or 10 females, upon the spines of the nopal. The insects, warmed by the sun, soon emerge and lay their eggs, each female producing more than 1,000 young. These spread rapidly over the plants, and as the young females become impregnated they attach themselves to the leaves and swell to great size, presenting the appearance more of vegetable excrescences than of animated creatures. In this condition they are gathered for the cochineal. The males, which are few in number, not more than one to 100 or 200 females, are of no value for this purpose. The females are picked off with a blunt knife, the first crop about the middle of December, and subsequently several more of as many successive generations, the last being in May. A laborer can pick off only about enough to make two ounces of cochineal in a day. Those taken off full of young lose about $\frac{2}{3}$ of their weight in the process of drying, to which they are subjected as soon as they are killed, which is done either by dipping them in a basket into boiling water, or placing them in a hot oven, or on plates of hot iron. By the first method, usually considered the best, the insects turn to a brownish red color, losing a portion of the white powder with which they were previously loaded between the wrinkles of the body. In the oven they retain this, and their color is then gray. Those killed on hot iron turn black. Such is the origin of the different varieties known in our market as "silver grains and black grains," and the "foxy" of the London market, the last being those killed by boiling water, though others ascribe it to the former being the female before laying her eggs, and the latter after she has parted from them. The quality of the cochineal is the same in both cases. When dried, the cochineal presents the form of grains, convex on one side and concave on the other, about $\frac{1}{8}$ of an inch in diameter, with the transverse wrinkles still visible. It is stated that it takes about 70,000 insects to weigh a pound. England imported in 1855, 3,131,184 lbs., including granilla and dust; in 1856, 2,086,512 lbs.; in the first 9 months of 1857, ending Sept. 30, 1,514,240 lbs.; and in the corresponding period of 1858, 1,081,088 lbs. The United States imported in the year ending June 30, 1857, 547,707 lbs., valued at $440,707, viz.: from England, 210,077 lbs.; from British Honduras, 195,790; from Mexico, 100,248; from other countries, 41,592.—An inferior quality of cochineal, called *sylvester*, is collected from a wild species of cactus, though the insect is sometimes cultivated with the others.—Cochineal insects are attacked and fed upon by birds, mice, and the larvæ of other insects; the last named suck out their bodies, leaving only the skin.—Attempts have been made with some success to introduce the culture of cochineal into other countries. The English government at one time offered £6,000 to any one who would introduce it into India. The Spaniards, however, took for a long time every precaution to prevent the removal of the living insects from the country. They were introduced at last into the Canary islands, and considerable quantities have since been furnished from Teneriffe. The French had succeeded in 1844 in establishing cochineal plantations in Algiers, and specimens have been produced from that country said to be superior to the best Mexican. The Dutch have also succeeded in producing large quantities of genuine cochineal in Java. A variety found in Todd's Valley, California, has all the properties of the cochineal of Brazil and the southern part of Mexico, the only apparent difference being that the article found in California is a light pink, while that of other regions is a deep scarlet.—The coloring principle which causes cochineal to give a crimson color to its watery infusion has been separated by Dr. John, who gave it the name of cochinilin. It is a brilliant purple red color, very soluble in water and in alcohol, but insoluble in ether, obtained by macerating cochineal in ether, and treating the residue with alcohol, and evaporating. It is next to be purified from fatty matters which accompany it by dissolving again in alcohol, and adding a little sulphuric acid, which causes it to be precipitated in a few days. The coloring matter is thrown down different metallic salts, as those of zinc, [illegible] iron, nickel, tin, &c., and thus produces [illegible] itates of various brilliant colors. By [illegible] the chloride and nitrate of tin the [illegible] splendid crimson and scarlet dyes [illegible] to which the great value of cochi [illegible] owing. (See CARMINE.) The best [illegible] called lakes are made by introducing prepared gelatinous alumina into the [illegible] of cochineal.—The high price of coc [illegible] led to the substitution of other artic [illegible] ing, and lac and madder have supers [illegible] employment to a great extent. Va [illegible] cles are used in the adulter [illegible] of [illegible] stance. Powdered talc or [illegible] shaken in a bag with the i [illegible] cts [illegible] their bodies, and increases their weight. [illegible] of a substance manufactured from colored [illegible] have been prepared in France to [illegible] dried insect. Cochineal has been [illegible] possess anodyne properties. It is [illegible] prescribed in the treatment of whoo [illegible] and is highly recommended in [illegible] tions.

COCHITUATE LAKE, a small [illegible] of water in Wayland, Framingham, and [illegible] townships, Middlesex co., Mass., 20 [illegible] which is supplied from it with

ANE, Lord. See Dundonald, Earl

ANE, John Dundas, a British trav-
ew of Archibald, 9th earl of Dun-
n about 1780, died in South America,
825. He entered the British navy at
10, and rose to the rank of captain.
commenced a series of journeys on
France, Spain, and Portugal. In
itted to the British admiralty a
oring the interior of Africa and the
the Niger. This offer was refused.
hen resolved on making a tour of the
uch as possible on foot, his means not
im to travel otherwise, intending to
Asia into America at Behring's strait.
from London in Feb. 1820, reached
urg the ensuing April 30, and left
May 23, the Russian government
im various facilities for travelling.
osha and Novgorod he was attack-
bers and plundered of every thing,
lothing. The governor of Novgo-
d him for these losses. Coch-
scow and Kasan, crossed the
and halted for a time at To-
led the Irtish as far as Semi-
he turned his steps to Tomsk,
ard to Irkootsk; there embarking on
he reached Yakootsk Oct. 6, 1820.
place he struck out N., continuing
on a sledge drawn by dogs. The
often descended as low as 29° F.
On Dec. 31, the day when Coch-
ed at Nijni Kolimsk, it went down
zero. The Tchooktches would
to traverse their country on his
ring's strait, and he took a S. E. di-
ching Okhotsk June 23, 1821, after
tensely from cold and hunger. For
had not met a single human being.
4 he set out for Kamtchatka. Ar-
etropaulovski, he was well received
n functionaries. There he became
the daughter of the sexton of the
ried her, and determined to abandon
ion of walking across the North
continent. He returned to London
route which he had previously trav-
reached Britain after an absence of
2 months. His propensity to wander
low him to remain quiet long, and
fe and home he set sail for South
here he died engaged in some min-
ses. His widow married the Rus-
Anjoff. See "Narrative of a Pe-
urney through Russia and Siberian
om the Frontiers of China to the
and Kamtchatka," 2 vols. London,

Lat. *gallus*), a gallinaceous or rasorial
order *gallinæ* and family *phasianidæ*,
native of Asia. The birds of this
ch includes the numerous varieties of domestic poultry, are distinguished from the pheasants by the crown of the head being naked, and the skin raised into a fleshy comb; by the base of the lower jaw having fleshy lobes or wattles; and by the tail, composed of two planes of feathers folded at a sharp angle, being generally carried erect; in the males the central tail feathers are elongated, and fall gracefully over the rest; the feathers of the neck, lower back, and tail coverts, are very full, and assume various shapes. They inhabit the jungles of India and the Asiatic islands; they are polygamous, and the males exceedingly pugnacious, manifesting their joy when victorious by loud and piercing notes; the males have a brilliant plumage, but the females, or hens, are of a duller color and smaller size. Of the many native species now known, it is difficult to decide from which, if from any, the domesticated races have sprung. It is the prevailing opinion that many species have mixed to produce the common barn-yard fowls. Temminck, who has paid the most attention to this subject, gives the preference to the species *G. giganteus* and *G. Bankiva*, from the fact that the females of these resemble in form and structure of the feathers our domestic hens, and that the males resemble the dung-hill cock in the great development of comb and wattles. The Jago and the Javan cock are probably the principal wild originals of the domestic breeds; and it is universally admitted that Asia was the primitive seat of the genus, and there also now exist the above-mentioned wild species. The Jago cock (*G. giganteus*, Temm.), of large size, is a native of Sumatra and Java; the comb is thick, slightly raised, and truncated or rounded at the top; the throat is bare, and the wattles of moderate size; the head, neck, and upper back are covered with pale golden-reddish hackles; the middle of the back and lesser wing coverts are deep chestnut, the feathers with disunited webs, the hackles covering the rump and base of the tail reddish yellow; tail large, and, with the greater wing coverts, glossy green; secondaries and quills with the outer webs pale reddish yellow; under parts glossy blackish green, with the base of the feathers deep chestnut, occasionally mottling the under plumage. The height of the cocks is from 2 to 2½ feet. To this species must probably be referred the large varieties so well known under the names of Chittagongs, Shanghais, Cochin Chinas, and Brahmapootras. The Javan cock (*G. Bankiva*, Temm.), the type of many of the smaller varieties, and especially resembling many bantams, occurs wild in Java and Sumatra. The skin is bare around the eyes and throat, the comb is large and deeply serrated, and the wattles well developed; the head, back, sides of neck, and rump are covered with long golden hackles; the upper back is bluish black, the centre of the lesser wing coverts of a deep chestnut, with the webs of the feathers disunited; the greater coverts steel-blue, the secondaries the same, margined with chestnut; the quills brownish black,

edged with reddish yellow; the tail black, with metallic reflections; the under parts black. Other wild species, less resembling the domestic fowls, but readily crossing with them, are the following: The bronzed cock (*G. æneus*, Cuv.), also from Sumatra, larger than the Javan; the comb is very large, and not serrated; the wattles are small and thick, and with the bare cheeks and throat are bright red; the feathers are not hackled, of a metallic green, with brilliant reflections; the plumes are rich purple, with a broad pale lake border; the tail is purple, with green reflections; under parts deep black, shaded with purple and green. The fork-tailed cock (*G. furcatus*, Temm.), a native of Java, a large species, is remarkable for its horizontal and forked tail, its smooth comb, and a large single wattle springing from the centre of the throat and divided into several lobes; the feathers of the head, neck, and upper back are short and rounded, close, velvety, and scale-like; the color of the centre is a deep metallic blue shading into golden green, with a narrow border of deep black; on the lower back and tail coverts the feathers are lengthened, black in the centre, with a narrow edge of yellow; the wing coverts are bordered with orange-red; the under parts are deep black; the hanging tail feathers are metallic green, tinged with steel-blue; the bill, legs, and feet are yellow; the female has much brown in the plumage, and the under parts gray. This species inhabits thick woods, and is very wild; though rarely domesticated, the males cross readily with domestic hens, and in this way add a puzzling element to the problem of the origin of the common races. Sonnerat's wild cock (*G. Sonneratii*, Temm.) inhabits the high wooded districts of Hindostan, where it is called by the English sportsmen jungle fowl. It is nearly as large as the domestic fowl, though of more slender proportions; the comb is large and serrated, and the wattles double; the shafts of the hackled feathers, of a golden orange color, in the centre and at the tip are dilated into flat horny plates, similar to those of the wings and tail of the Bohemian wax-wing; the centre of the back, the throat, breast, belly, and thighs are deep gray; the tail a rich green; below the hackles the feathers are deep purple with a pale yellow edge, and below these golden green, edged with gray with brilliant metallic reflections. The hen has neither comb nor wattles, and the neck is covered with feathers; the plumage is of a general brown tint above, and grayish white below. Though smaller than game cocks generally, it is very bold and active, and is eagerly sought after by the Mohammedan natives of India for cock-fighting; it is generally believed that this species has not mixed with the domestic races, except in the breeds kept as game cocks. The negro cock (*G. morio*, Linn.), originally from India, is remarkable for its blackish violet crest and wattles, black skin and periosteum; the plumage is of a dark color, with bronzed reflections; this easily becomes domesticated, and crosses readily with other races. The crisped or Friesland cock (*G. crispus*, Linn.), considered a distinct species by Temminck and Gray, has the ends of the feathers turned up or frizzled; it is of small size, wild, not very easy domesticated, and is seldom reared except as a curiosity; the pure breed is white, with smooth feet; they are quite common in Java, Sumatra, and the Indian archipelago, where the natives rear them. Some authors consider this and the next species mere varieties produced by accident, and perpetuated by accident or design. The silk cock (*G. lanatus*, Linn.) has the webs of the feathers so disunited that they appear like silk or glossy hairs; the general coat is white, and the legs are feathered externally to the toes. They are common in China and Japan, where they are sold to Europeans as curiosities. The epidermis is black, and this peculiarity is communicated to the hybrids produced by them and the common fowl, with which they readily cross; the flesh, however, as in the negro fowl, is white and of excellent flavor. The gallinaceous birds are remarkable for the facility with which different species will unite and produce fertile offspring, a peculiarity which renders them doubly valuable to man. The wild hens do not vary in their plumage like the domestic, but resemble each other [illegible] vidually, being generally of colors inte [illegible] between black and white, these two [illegible] being the result of special care on the [illegible] man to keep breeds unmixed. There are [illegible] cies, however, which must originally have [illegible] white, as the *G. crispus* and *G. lanatus*, such breeds will remain white if not crossed with others. Whatever the origin of the [illegible] tic cock, its subjugation to man was [illegible] a work of time and difficulty; to [illegible] habitant of the wildest woods and of a [illegible] clime into the tamest companion of man [illegible] most every zone, was certainly not the [illegible] of a moment; it must have required the [illegible] est patience on the one hand, and a [illegible] able adaptation to circumstances on [illegible] As we find the common cock, its [illegible] tion is most complete, and its [illegible] great.—It would be useless to [illegible] description of the external appea [illegible] common cock and hen; but there [illegible] points of internal structure which [illegible] tioned. Toward the lower part of the œsophagus is dilated into a first [illegible] with membranous walls, the crop, [illegible] the food remains a certain time and [illegible] a partial softening; below this is a [illegible] gestive cavity, small in the *galli* [illegible] in birds having no crop, and sec [illegible] tric juice; this opens into the [illegible] or gizzard, where chymification [illegible] the gizzard is remarkably muscular, [illegible] comminute the hardest food, and even [illegible] bodies exposed to its continued action; [illegible] in breaking up the hard grain and [illegible] which they feed, the *gallinæ* are in [illegible] of swallowing small pebbles. The canal is long, as in vegetable feeders generally, measuring 5 times the length of the bird; the cæca are 6 inches long; the testes are probably larger, in proportion to the size of the body, than in any other bird; the trachea and larynx are capable of being elongated, compressed, or dilated, according to the sounds to be produced. The cock is a proud bird, walking as if conscious of his superior strength; but at the same time he is kind, always inviting his family to eat first of any food he may have discovered, and protecting them from the attacks of all enemies, while the hens meekly submit to his just but mild dominion; now and then a hen essays to crow, but she is generally a barren and useless fowl, despised by her associates and the pest of the farm yard. The cock is very pugnacious, and will always measure his strength with one of his own sex; this propensity is noticed in very young specimens. The male begins to propagate at about the age of 3 months, and his or lasts about 3 years, though he may live the age of 10; one is sufficient for 15 or 20 es. The cock is a very clean bird, and spends much of his time in arranging his feathers; his voice, if not soft and melodious, is clear, sonorous, and exhilarating, though sometimes annoying, from its repetition far and near, to those disposed to sleep too late in the morning. The cock was a favorite bird with the Greeks and Romans, and is frequently represented on their coins; the ancient philosophers dedicated it to Apollo, Mercury, Mars, and Æsculapius, and thought it the most acceptable sacrifice they could offer to their deities; in later times, the crowing of the cock was supposed to be the signal at which all spirits, whether good or evil, must retire from mortal sight; and Protestant sects even now delight to place this bird, in golden effigy, on the spires of their churches. Like other domesticated races, cocks and hens are very liable to monstrosity; double-headed and four-footed chickens are common in collections. Hens, if properly housed, will lay even in the coldest weather in temperate regions; having laid 18 or 20 eggs, they show a disposition to sit upon them, but if the eggs are taken away they continue laying. As the *gallinæ* can eat without assistance as soon as they leave the egg, instinct teaches the hen to lay as many eggs as she can cover and keep warm with her body. Like all birds, the hen, if left free to act, will lay her eggs and hatch her brood in some hidden place, and return to the poultry yard with her chickens in excellent condition. The young leave the egg on the 20th day. The affection of the hen for her young is remarkable; from timid and greedy, she becomes brave, self-denying, and eager to discover food for her chickens, protecting them under her wings from marauding animals and birds of prey; as the cock is a model husband and father, the hen is the pattern of a tender and faithful mother.—For epicurean purposes, man has from ancient times been in the habit of removing the testes of the cock; this mutilation renders the birds, called capons, indifferent to sexual and fighting propensities, and causes them to grow fat, with all the whiteness, tenderness, and delicacy of a chicken; the voice loses its shrillness, and their whole demeanor renders them liable to the insult of both cocks and hens, and they require the special protection of man that they may eat, drink, sleep, and grow fat. There is no doubt that the flesh of capons, like that of the ox, is more nutritious and easier digested than that of the cock and bull. Capons may be taught to perform some of the offices of the female; they have been taught to hatch out eggs by covering them with their bodies, and to take the care of the young brood. Hens are sometimes deprived of their ovaries, and the flavor of their flesh is said to be thereby much improved.—In course of time men conceived the idea that the only office of the hen in hatching was to supply the necessary amount of heat for the proper time, and accordingly various artificial processes of incubation were tried; the ancient Egyptians were peculiarly successful in their processes, and their hatching ovens furnished, in old times, 100 millions of chickens annually; other nations, the French particularly, have invented various kinds of hatching apparatus, and very recently has been published a description of one, in which the heat is conveyed from a central stove by radiating flexible tubes to a great number of straw nests filled with eggs. By the Egyptian process more than ⅔ of the eggs produced chickens, which is doing considerably better than the natural mothers, who, on an average, cannot hatch out more than ⅓ of the number of the eggs.—Domestication has produced many changes in the form and size of the cock, especially in the crest, wattles, and arrangement of the feathers on the body and legs. Much attention has been of late years given to domestic poultry; and it is probable that from the individual suffering from the "hen fever" much public good will result in the improvement of the various breeds. The game cock stands at the head of the domestic varieties, from which it does not appear to differ except in its superior strength and courage; the best breed is generally believed to be the *G. Bankiva* without any crossing with other varieties; the East Indians prize the *G. giganteus* and the *G. Sonneratii* as game cocks. Cock-fighting was practised among the Greeks and Romans, and was introduced into England by the latter nation; it is not now much in vogue except in the East Indies and in Spanish America. In this sport the plumage is trimmed, to make the bird lighter and more active and give its antagonist less hold upon it; the legs are armed with an artificial steel spur, or gaffle, capable of inflicting a speedily fatal wound. Large fortunes, even wife and children, as in other kinds of gambling, have been risked on the issue of these fights. The combatants stand opposite each other with bristling plumes, the head low and the neck extended; after observing each other in silence, with angry looks, one makes a movement, when both erect themselves and dart upon each other; these manœuvres are repeated until one has torn the comb of the other, driven him off the field by beating him with his wings, or pierced him with his spurs. When cock-fighting was the favorite sport of kings and nobles, as much attention was paid to keeping the breed pure as was bestowed upon the race horse. The game cock is valuable, independently of his courage in expelling intruders from the poultry yard; the hens are small eaters, good layers, determined sitters, strong, rarely sick, and very solid and heavy. Preëminent among the modern favorites are the large Malay and Chinese varieties, embracing the Chittagongs, Shanghais, Cochin Chinas, Brahmapootras, which are probably all varieties of the *G. giganteus*, variously crossed. The Chittagongs were originally brought from Malacca; they stand high on their legs, are long-necked, and are usually dark brown, streaked with yellow or white; they present a very striking appearance, and form an excellent cross with the common fowl, possessing the hardiness of the latter with the large size of the foreign stock. The Shanghai variety weigh as much when 5 months old as the full-grown common kind; they may be black, yellowish, or white, bare-legged or feathered, and all equally good. This variety at one time fell into disrepute from the caricatures of fowls too often seen, long-legged, crane-necked, big-headed, greedy eaters, with more bone and feathers than flesh; these were carelessly bred and crossed. The pure variety is large, with a round short body, broad breast and back, and closely feathered; when a year old, the male should weigh from 10 to 12 lbs., and the female from 8 to 9 lbs. They are little disposed to roam or do mischief in the garden; they are good layers, and their flesh is yellow, juicy, and of delicate flavor. The Cochin Chinas, considered by many the same as the Shanghai, are very large; the general color is a rich glossy brown, or deep bay, with a black horse-shoe marking on the breast; the comb is moderate, serrated, and the wattles double. From their ability to double up the posterior half of the wing and to bring it forward between the body and the anterior half, they are sometimes called ostrich fowl. The flesh is white and delicate; the eggs are large, chocolate-colored, and of excellent flavor; and they are excellent layers. The Chinese fowls were imported from Canton about 12 years ago, and somewhat resemble the Cochin Chinas in size and color; they are good layers; the eggs are buff or nankin color, and the flesh is good; they are hardy, peaceable, and easily raised; their wings are so short that they cannot fly over ordinary fences, and it is necessary that their perches should not be more than 2 feet from the ground, nor above each other. The Brahmapootras are either a gray variety of the Shanghai or a cross between the latter and the Chittagong; they are excellent layers, and their eggs are twice the size of a common hen's egg; a pair will weigh from 18 to 24 lbs., and they have been sold for $70 a pair; crossed with the Dorking breed, it is very handsome. As the Shanghai family seem to be as hardy, as good breeders, and as easy to raise as any fowl, their size, peaceable dispositions, and domestic habits would entitle them to a preference over others. The Dorking breed, so called from the English town of Dorking, in Surrey, are of large size and good shape, and, if pure, should have 2 toes behind instead of one; the silk fowl also is seen with 5 toes, and even a greater number of toes has been found, a peculiarity which by great care might become the characteristic of a breed. The color originally was pure white, but they are now generally seen speckled or mottled with black or gray. The flesh is white and delicate, and is considered by many the best for the table; they are good layers, and easily reared and fattened. This breed is supposed by Dickson to have originated from a cross of the Malay with the game fowl. The males weigh from 7 to 9 lbs., the females from 5 to 7 lbs.; when bred in and in for a long time, the comb becomes double. The black Poland, instead of a comb, has the head covered with feathers, which sometimes form a crest overhanging the eyes; there are also white, silver, or golden Polands, according to the general color; the first-named is black, with a white topknot; all varieties with topknots are called Polands by the English. They are very ornamental and excellent layers, but so little inclined to sit that their eggs are often put under other hens: they fatten quickly, and their flesh is considered by many as good as, if not superior to, that of the Dorkings. This breed is said to have been carried to Europe by the Spaniards from St. Jago. The black Spanish fowl is a large breed with high-colored comb and wattles, doubtless the result of high culture; the general color is black, and the feathers of the legs, thighs, and belly are velvety; the feet and legs are lead-colored; the distinguishing character is the silvery white cheek pieces; they are excellent for the table, and layers of the first order, and cross advantageously with the common fowl; from their wildness they are good for ranging over large farms; the male weighs from 4 to 6 lbs., the female from 3 to 4 lbs. The Fayal fowls are the same. The Bolton grays have the plumage silvery white, with minute and uniform pencillings of black; their forms are small, neat, and rounded, the comb double-rowed and sharp-pointed, the wattles large and round, and the ear lobes white; they are good layers, easily kept, hardy, and moderate eaters; they are also called Hamburgs, of which there are the varieties, creole, silver and gold spangled, and pencilled Hamburgs. The small race of bantams, so named from a town in Java, are distinguished by their plumed legs, a variation caused by cultivation and high feeding; some have topknots, others have the legs naked; there is a dwarf variety, not larger than a pigeon; the Turkish cock seems to differ from the bantam only in the naked legs. These are all

ieties that can be mentioned of the more
domesticated fowls. Many extensive
rs are of opinion that the native yellow-
fowl, when properly cared for, is as
blé both for eggs and the table as any
ı breed; of course they vary much, ac-
g to the mixture of varieties; they ought
fr 150 to 250 eggs in a year, but prob-
ge ally kept, they do not average
uan 80, and their average weight would
ceed 2¼ lbs. A little care will render the
r of hens very easy and profitable; all
t is a warm house to live in at night,
ui water, and a moderate supply of food;
d on grains, worms, insects, and the
ua the stable and kitchen, except in win-
y can almost pick up their own living.
KATOO, a name given to the parrots
sub-family *cacatuinæ*, family *psittacidæ*,
ieir peculiar call-note or cry. The cock-
nave the bill large, of various lengths,
at the base, with the culmen usually
rched to the tip, which is very acute;
ngs generally rather long and pointed, the
ad and mostly even, the tarsi short and
and covered with small scales, and the
l. They may be readily distin-
rom the other parrots by their light
y their graduated crest and even tail;
f the genera, however, have sombre col-
t none the gorgeous hues of the lories,
s, and parrakeets. Their robust legs and
claws indicate the rasorial or scratching
sities of the group; and their powerful
e able to break the stones of the hardest
They are rather wild, and possess but
nitative power, seldom articulating any
nore than "cockatoo." The genus *caca-*
iss.), from which the sub-family is named,
e bill short and strong, hooked and
the wings long, and the tail short and even.
a dozen species are found in the forests
Moluccas and Australia, some preferring
ses near rivers and swamps, others the
ains; they are shy and hard to approach,
their presence is easily known from a
e by the loud screams from their vast
they feed on vegetable substances, seeds,
ibers, and bulbous roots, which they dig
ı their strong claws; they do much in-
trees by stripping off the bark of the
branches, cutting it into small pieces,
using it for food; the eggs, usually 2 in
:, are laid in the rotten portions of holes
, or in fissures of the rocks. This genus
es some of the most beautiful species, of
ze, of a white plumage tinged with rose
r sulphur yellow, and with large crests.
; the finest is the tricolor-crested cocka-
Leadbeateri, Vigors), with a crest of scar-
low, and white, of long acuminate feath-
th the tips directed forward, which the
n open and shut like a fan; it is a native
ralia; the whole of the body is white,
with crimson on the neck, breast, sides,
der the tail and wings. The sulphur-crested cockatoo (*C. sulphurea*, Gmel.) resembles the last named, except that pale sulphur-yellow takes the place of the reddish tints; it is a native of the Moluccas and other Indian islands; from its beauty, docility, and amusing habits, it is a favorite with bird fanciers, though its powers of articulation are small. Other species living in the Moluccas are the *C. rosei-capilla* (Vieill.), *C. Moluccensis* (Gmel.), and *C. cristata* (Linn.); the red-crested cockatoo, *C. Philippinarum* (Gmel.), a native of the Philippine islands, is also a handsome species. The genus *licmetis* (Wagler) differs from *cacatua* in having the bill much longer; it is peculiar to Australia, living in flocks on trees in the neighborhood of water; the food consists of bulbous roots, which they dig up from considerable depths in the earth; the notes are rather plaintive. Another genus, peculiar to Australia, is *calyptorhynchus* (Vig. and Horsf.), characterized by a very large and strong bill, broad at the base, and much higher than long; the lower mandible small, dilated, and strongly emarginated at the tip; the wings moderate, and the tail lengthened and rounded. They live in small flocks in woods near rivers, feeding on the fruit and bark of the *eucalyptus*, destroying more than they eat by cutting off the smaller branches and unripe fruit; their flight is heavy and noisy; they are very shy, and more fierce and wild than other parrots; the eggs, 2 or 3 in number, are laid in the hollows of decayed trees. There are about a dozen species, of large size, and of dark colors. One of the finest species is the Banksian cockatoo (*C. stellata*, Wagler), called by the natives *geringore;* the plumage is generally greenish black, with a purple tinge on the back and wings; the bill is grayish white, the cheeks yellow, and the lateral feathers of the black tail vermilion in their central portion with narrow bars of black. A larger species is Solander's cockatoo (*C. Temminckii*, Kuhl). One of the largest of the parrot family is the Goliah, or great black cockatoo, belonging to the genus *microglossum* of Geoffroy, which is characterized by a very large bill, much curved to the long and acute tip, the lateral margins of the upper mandible bidentated, the lower mandible smaller, broad, and much emarginated on each side; the cheeks and front of the throat denuded of feathers; they live in the forests of New Guinea, Ceram, and other eastern Australian islands. This species (*M. aterrimum*, Gmel.) is of dark color, with a crest of grayish, long, narrow feathers, which can be erected at will. The genus *nestor* of Wagler has the bill much lengthened, the wings long and pointed, and the tail moderate and even, with the shafts of the firm broad feathers prolonged beyond the webs. There are 2 species, living in New Zealand and Australia; they eat nuts, berries, and bulbous roots; in the morning and evening they are very noisy. The southern brown cockatoo (*N. australis*, Shaw) has the forehead and crown grayish white, slightly tinged with green; the ear coverts yellowish; the sides of the neck,

breast, and abdomen, dull red, the feathers margined with green; the back and wings brownish oil-green; the rump and vent deep red; the tail brownish green.

COCKATRICE, another name for the basilisk, a fabulous, serpent-like animal, which was believed to be produced from a hen's egg. The superstition prevailed among the ancients and during the middle ages. (See BASILISK.)

COCKBURN, SIR ALEXANDER JAMES EDMUND, a British judge, born about 1808, was graduated at Cambridge in 1829 as LL.B., became a queen's counsel in 1841, took his seat in the house of commons in 1847 as radical member for Southampton, made an eloquent speech in defence of Lord Palmerston's foreign policy in 1850 on occasion of the debate relating to the blockade of Athens; was soon afterward appointed solicitor-general, and in March, 1851, attorney-general. His best forensic efforts were in the Hopwood case at Liverpool, and in the famous Palmer trial. At the end of 1856, on the death of Sir John Jervis, he was appointed chief justice of the court of common pleas.

COCKBURN, CATHARINE, an English authoress, born in London, Aug. 16, 1679, died May 11, 1749. She was the daughter of Capt. David Trotter, was converted from the Protestant to the Roman Catholic faith, and then reconverted. In 1708 she married Mr. Cockburn, a nonjuring clergyman, who afterward took the oaths, and obtained the living of Long Horseley, Cumberland. Mrs. Cockburn wrote "A Defence of Locke's Essay on the Human Understanding," and various other metaphysical essays, tragedies, comedies, and poetry. Her works were published by Dr. Birch in 2 vols., 1751.

COCKBURN, SIR GEORGE, an English admiral, born in 1772, died in Aug. 1853. He served on the East India, home, and Mediterranean stations. He received the thanks of the house of commons for his operations against Martinique, by which that island came into the possession of Great Britain. He took a conspicuous part in the hostilities against the United States, particularly at the burning of the capitol at Washington in 1814, and in laying waste the banks of the Potomac. Upon the close of the war he was employed to convey Napoleon to St. Helena. After his return to England, he served repeatedly as member of the house of commons and as lord of the admiralty.

COCKBURN, HENRY DUNDAS, lord, a Scotch jurist, born near Edinburgh, Oct. 26, 1779, died April 26, 1854. In 1800 he entered the faculty of advocates, and attached himself to the whig party, although his family connections belonged to the tories. His politics interfered with success in his profession, but in course of time he rose to eminence as an advocate. He brought himself into notice in 1818 by gratuitously defending several persons charged with treason. In 1828 he defended Helen McDougal, charged as an accomplice with Burke in the "Westport murders," and obtained her acquittal. Under the administration of Earl Grey, Jeffrey became attorney-general, and Cockburn solicitor-general for Scotland. In 1834 he was raised to the bench as one of the lords of sessions, when he took the title of Lord Cockburn. Three years afterward he was appointed a lord commissioner of justiciary. Without being a great judge, he possessed a sound judgment and a clear head, and his decisions were seldom reversed on appeal. He was an early contributor to the "Edinburgh Review," an article in which from his pen went far to produce a reform in the method of selecting juries. His literary fame rests on a genial life of his friend Lord Jeffrey, published in 1852, and the "Memorials of his Time," a volume full of anecdote and of graphic sketches of society. He was an excellent conversationist.

COCKCHAFER (*melolontha vulgaris*, Fab.), a European insect, belonging to the lamellicorn family of the order *coleoptera* or beetles. The genus *melolontha* was established by Fabricius, who first separated it from *scarabæus*. The body of the melolonthians is oblong oval, convex, and usually of a brownish color; the antennæ are 9 or 10 jointed, 5 to 7 of which are flattened into leaf-like pieces, which open like the leaves of a book; the jaws are horny and powerful for cutting and grinding the leaves and roots of plants; the thorax is nearly square; the wing cases leave uncovered the hinder extremity of the body; the legs are long, the first pair being armed externally with 2 or 3 teeth, which enables them readily to penetrate the ground; the claws of all are notched, which gives them a firm hold of the leaves. The habits and transformations of this species are well known, and will serve as a type for all the *melolonthidæ*, which are all more or less hurtful to vegetation, as they feed on plants from their birth to their death. Their duration in the perfect state is very short, each individual living about a week, and the species wholly disappearing in the course of a month. After the pairing of the sexes, the males perish, and the females dig a hole in the earth 6 inches deep, by means of their fore feet, in which the eggs are deposited to the number of 100 to 200; after this they return to the surface, and soon die. In 2 weeks little whitish grubs are hatched from these eggs, with 6 legs near the head, and strong jaws, which attach themselves to the tender roots, and commit often the most deplorable ravages; for 3 or 4 summers the larvæ live near the surface, sinking below the reach of frost as winter approaches, and remaining torpid till spring, when they change their skin, and ascend to the surface for food. When they have reached their full growth, they cease eating, and bury themselves about 2 feet deep, each constructing a kind of lodge, smoothly lined by some glutinous silky substance thrown from the mouth; in this it is changed into a pupa or nymph, casting off its skin, displaying through the new envelope the parts of the perfect insect. In the month of February the cockchafer pierces this envelope, and 3 months afterward es its appearance during the night in its form. The ravages committed by these e are often as extensive as those of the st tribe. According to Kirby and Spence, destroy whole acres of grass by devour- the roots, undermine the richest mea- s, and eat the roots of wheat and other ns, and those of young trees; in England, nd, and France, whole crops have been re- edly destroyed by them. They are equally ructive in their perfect state. During the th of May they come forth from the ground, nce they have been called May bugs and beetles. They are sometimes called also bugs. They pass the greater part of the day quiet state, attached to the branches and es of trees; as evening approaches, they me active, buzzing about from tree to tree rch of food, and for the purpose of pair- Their flight is dull, heavy, and irregular; fall against objects in their way with a s which often brings them to the ground; continue their flight till about midnight; frequently fly in at the window, being at- ted and bewildered by the light of a lamp. e "Philosophical Transactions" for 1697, it ated that a few years before they were so nu- in Galway, Ireland, that they filled the and trees, clinging to each other like of bees, and when flying darkening the a cloud; in a short time all the foliage miles around was consumed, and the trees in ner were as bare as in winter. Mouffet, History of Insects," says that in 1574 ay cockchafers were driven into the river rn, that the wheels of the mills were stop- l. To check these ravages many means have n employed. Smoking the trees with the of sulphur and resin, stupefying the in- ts, which can then be shaken from the anches, placed in heaps, and burned; employ- g children to follow the plough, and pick up e white grubs as they are turned up; planting and strawberry plants, of which they are ond, in orchards, and thus saving the more luable trees; spreading soot, ashes, and lime d the foot of young trees—these and plans, of course, can only be successful ll scale, and would be of no avail in an nd extended country. Nature has pro- better means to destroy these insects in e numerous animals and birds which feed them. Weasels, badgers, martens, rats, rets, bats, owls, crows, jays, domestic poul- y. night hawks, &c., destroy great numbers of n.—In America there are several melolon- s, whose ravages are nearly as great as se of the European cockchafer. The most mmon is the May beetle (*phyllophaga quer- a*, Knoch.). This is of a chestnut-brown lor, smooth, and finely covered with little im- essed dots; each wing case has 2 or 3 slightly vated longitudinal lines; the breast is clothed th a yellowish down; its length is about $\frac{9}{10}$ of inch. The perfect insect feeds on the leaves trees, particularly on those of the cherry. It flies at night in May and June, and often enters houses, attracted by the light. The grub is a white worm with a brownish head, and when fully grown is nearly as thick as the little finger; it devours the roots of grass and other plants, in some cases completely undermining the turf; it is, in turn, greedily eaten by crows and domestic fowls; the much abused skunk is very fond of the full-grown insects. The best way to get rid of them is to shake the trees in the morning, when they do not attempt to fly, and collect them on cloths spread below; they should then be thrown into boiling water to kill them, when they may be given as food to swine. This insect is also called dor bug. There are several other species of melolonthians in America, varying in size from $\frac{7}{16}$ to $\frac{9}{16}$ of an inch, all nocturnal in their habits, which are more or less injurious to gardens, nurseries, and orchards; they also devour the leaves of many forest trees.

COCKE, an E. co. of Tennessee; area estimated at 270 sq. m.; pop. in 1850, 8,300, of whom 719 were slaves. It borders on N. Carolina, and is traversed by French Broad and Big Pigeon rivers. The surface is mountainous and well wooded. Iron or Smoky mountain, on the S. E. border, is the principal range. The productions in 1850 were 544,516 bushels of corn, 129,389 of oats, and 81,875 lbs. of butter. There were 22 churches, and 1,294 pupils in the public schools. Capital, Newport.

COCKE, WILLIAM S., an American naval officer, born in Virginia, died March 7, 1823, entered the navy as a midshipman in Jan. 1809, and was made lieutenant, July, 1813. In 1823 he commanded the schooner Fox, one of a squadron of light vessels employed on the West India station under Commodore David Porter, for the suppression of piracy. On March 7 of that year the Fox, while attempting to enter the harbor of San Juan, Porto Rico, was fired upon from the castle, and Lt. Cocke was killed by a round shot. A correspondence upon the subject ensued between Commodore Porter and the governor-general of the island, Don Miguel de la Torre, who expressed the deepest regret upon the occasion, alleging that in consequence of an expedition against the island, which had been organized the year previous in the United States by Gen. Ducoudray Holstein, and reports that others were to follow it, orders had been given to prevent the entrance of armed vessels into their ports unless certain formalities were first complied with, which were neglected by the commander of the Fox; and that shots were fired to warn her off before she was actually fired into. The remains of Lt. Cocke were interred at San Juan with the honors of war.

COCKER, EDWARD, an English arithmetician of the 17th century. He was long esteemed the author of the celebrated arithmetical work that is called by his name, but recently an attempt has been made to transfer its authorship to another. Cocker was an engraver as well as a teacher of writing and arithmetic. He is said to have published 14 books of exercises in penmanship, some of which were engraved on silver plates. He excelled as a calligrapher, and Evelyn asserts that his style rivalled that of the Italians.

COCKERELL, Charles Robert, an English architect, born in London, April 27, 1788. In early life he undertook extensive excavations in Greece and other classic countries, and many of the relics obtained by him are now in the British museum and in Munich. Mr. Cockerell is standing architect of the bank of England, and has during the last 22 years superintended all the additions and improvements in the bank building. Among his principal works are the Hanover chapel in London and the new public library at Cambridge.

COCKERILL, John, an English engineer, born in Lancashire, Aug. 3, 1790, died in Warsaw in 1840. He was the youngest son of an English machinist who had been employed in Belgium. John, with his brother James, also went to that country at an early age. After some preliminary experience, the former, in 1816, established a machine shop at Seraing, which, by dint of persevering industry extending over many years, he augmented until it became one of the largest in Europe. He himself superintended its minutest details, beside giving personal inspection to numerous works which he was employed to construct abroad. In the height of his prosperity 2,000 workmen were employed at the Seraing works, receiving 70,000 francs in weekly wages, the total receipts of the establishment being 15,000,000 fr. annually. Iron went into the works in the form of ore and came out as machinery. This immense establishment belonged ½ to the king of Holland, and ½ to Cockerill; but at the revolution of 1830 the latter bought the king's share and remained sole proprietor. Prosperity continued to flow to him till 1839, when various causes, among them the stoppage of the Belgian bank, obliged him to suspend, with liabilities of 26,000,000 fr. against 15,000,000 of assets. In the hope of retrieving his fortune he went to Russia, but died on his return at Warsaw.

COCKLE, the common name in England of the bivalve shells of the genus *cardium*, a genus of universal distribution, of which about 200 living species are known, beside about 270 fossil species belonging to the upper silurian formation. The shell is of ventricose form with prominent umbones. The animal is furnished with a powerful foot adapted for burrowing in the sand; and by first bending and then suddenly straightening it he can also use it to throw himself a considerable distance. *C. edule* lives in the brackish water of the Thames as high as Gravesend, and is found in the Baltic, Black sea, and Caspian. On the coast of Devon a large prickly species (*C. aculeatum*) is eaten for food.

COCKNEY (probably from Lat. *coquina*, a kitchen, and related to the Fr. *cocagne* and It. *cuccagna*, an imaginary country of luxurious idleness), a nickname applied to a certain class of Londoners. It has been interpreted to mean a person so delicately nurtured as to be ignorant and incapable of labor, hardship, or any rudeness; and some one has accounted for its origin from the anecdote of a young Londoner, who, on a rare visit to the country, struck with admiration at the crowing of a cock, exclaimed: "How that cock neighs!" The name occurs in verses as ancient as the reign of Henry II. When, during and prior to the reign of Henry VIII., the sages of the Middle Temple were accustomed to disport themselves on Childermas day, it was ordained that the king of the cockneys, with his marshal, butler, constable, and other officers, should be entertained with due service, in "honest manner and good order." The modern cockney mispronunciation consists in the abuse of the consonant *r* appended to words ending in a vowel, as Apollar, sofar, lawr, for Apollo, sofa, law. The cockney school of literature is an appellation under which the wits of "Blackwood's Magazine," in its earlier numbers, assailed Leigh Hunt, Hazlitt, Keats, and some other young authors.

COCKROACH (*blatta*, Linn.), an insect belonging to the order of *orthoptera*, and to the group of runners or *cursoria*, having straight wings, and all the legs adapted for rapid motion. The genus *blatta* has 5 articulations to the tarsi; the wings are folded lengthwise; the wing covers are oval, horizontal on the top of the back, and overlapping on their inner edges; the body is oval and flattened; the antennæ are long and thread-like; the legs have small spines. Cockroaches are general feeders, eating indiscriminately both animal and vegetable substances. They undergo only a partial metamorphosis, their changes consisting in the increase and development of the wings and their covers, which exist as mere rudiments in the nymph state; in other respects the nymph and larva are like the perfect insect, walking and feeding in the same manner. They are nocturnal insects, and live both in the woods
in houses. They run with considerable s
ness. There are several species; those
nous to this country are found exc
woods, under stones and leaves; while
mon species, originally from Asia, infests d
ing houses, preferring warm and dark
ovens, and hearths, whence they issue
in search of food. The oriental
(*blatta orientalis*, Linn.) is spread exte
over Europe and America, especially in
maritime towns, being imported from
vant in ships' cargoes. In many houses
a perfect pest, devouring all kinds of
vegetable articles of food, and even
clothing, leather, cotton, and wool; on
proach of a light they escape with co
rapidity into their holes. Eatables
cannot devour are often rendered
by the disagreeable smell communicate
by the excrements. In old houses t
in great numbers, and the only way
of them is by poison. A mix
Indian meal, and molasses, in a

placed at night near their haunts, will be eagerly eaten, and will soon exterminate them. Another more dangerous preparation is a mixture of a teaspoonful of powdered arsenic with a tablespoonful of mashed potato, which may be crumbled about the hearth at bedtime; this requires great caution in its use. Phosphorus mixed in a paste will also kill them. The females lay 1 or 2 oval capsular bodies about as thick as ½ their body, each containing 16 eggs. The cockroach is terrestrial in all its states, and equally omnivorous and voracious in all.

COCLES, Horatius, a hero of the old Roman lays, who defended the Sublician bridge, in conjunction with Spurius Lartius and Titus Herminius, against the whole Etruscan army under Porsena, while the retreating Romans broke down the bridge behind them. When the work of destruction was nearly accomplished, Horatius sent back his two comrades, and as soon as the bridge was altogether destroyed, he himself plunged into the Tiber and swam across to the city in safety, amid showers of arrows from the enemy. Rome raised a statue to his honor in the comitium, and granted him as much land as he could plough around in one day.

COCOA, a preparation of the seeds of the tree called by Linnæus *theobroma cacao.* Several varieties of the tree are since described, which produce beans, or seeds, varying somewhat in their sizes and properties. Their use is for the manufacture of chocolate. The article was unknown in Europe till it was introduced from Mexico in 1520 by the Spaniards; with them its preparation was long afterward kept secret. The tree abounds in the countries of Central and South America, and in the West India islands, sometimes forming whole forests. It is cultivated in the Mauritius and the French island of Bourbon. It is an evergreen, producing fruit and flowers throughout the year, grows to the height of from 12 to 20 feet, and bears a fruit resembling a short, thick cucumber, 5 or 6 inches long and 3½ in diameter, which contains 20 to 30 beans. These are arranged in a pulp of a rose color, in 5 rows. Their size is commonly about that of a sweet almond, but thicker. In this respect, however, there is a great difference in the trees of different countries. In Central America the fruit is much larger, and contains from 40 to 50 seeds; in the West India islands, and in Berbice and Demerara, it is so small as to contain only from 6 to 15 seeds. The pulp which encloses the beans is a sweet substance, something like that of the watermelon, and is used for food. The fruit matures for gathering in June and December. The most highly esteemed varieties are obtained from Central America. The beans when separated from the pulp and dried in the sun are ready for the market; but in some countries they are placed in large tubs and covered for the purpose of undergoing a slight fermentation, by which they lose some moisture and a portion of their bitter and acrid qualities. While fermenting, they are regularly stirred every morning. The same object is attained in Mexico and elsewhere by burying the beans in pits in the earth. They are finally sun-dried, and are then ready for sale. They are prepared for use by roasting in the same way as coffee is roasted. When the aroma is well developed, the beans are turned out into shallow wooden vessels and stirred till cool. Those which have been fermented now lose the shells readily, and split open into several lobes like split beans. The shells, amounting to about 12 per cent. of the whole weight, are separated by winnowing, and form an inferior quality of cocoa known as shells. The split seeds thus prepared may be used for food by long boiling; but for making chocolate they are to be ground and mixed with other substances, as described in the article Chocolate. Their average composition, according to Johnston, is nearly as follows: water, 5 per cent.; starch, gum, &c., 22; gluten, &c., 20; oil (cocoa butter), 51; theobromine, 2. The theobromine is a white, crystallizable substance, similar to the theine in tea, but contains more nitrogen. The other constituents, as starch, gum, gluten, and the large proportion of fat, give to cocoa the variety of nutritive qualities contained in milk, and, like this, it contains every ingredient necessary to the growth and sustenance of the body. (Dr. Hassall's "Adulterations Detected," pp. 157, 158.) A volatile aromatic oil and a bitter and an astringent principle are present, which affect the taste and qualities of the cocoa, though they are not detected in the analyses. The former is developed in the roasting, and is the cause of the aroma which is then exhaled. The fatty oil, called butter of cocoa, resembles tallow in whiteness and consistence; it melts at 122° F., and in this condition may be separated by expressing it from the other ingredients. It has a mild and agreeable flavor, and is not apt to turn rancid. The physiological actions of the principle called theobromine, and of the aromatic oil, are probably similar to those of the corresponding constituents of tea and coffee. The volatile oil gently excites the nervous and vascular systems, and, like the caffeine of tea and coffee, retards the waste of the tissues, thus allaying hunger. Neither tea nor coffee possesses the nutritive oily matter of cocoa, and of the gluten which is contained so largely in tea a considerable portion remains in the leaves when the infusion is prepared. The shells contain but little theobromine and fat, a small portion of mucilage, no starch, but much vegetable tissue or lignin. Their infusion in boiling water is much used as a substitute for tea and coffee. Its taste is somewhat like that of chocolate, but weaker. The irregular-shaped, angular pieces into which the seeds separate by pressure after the shell is removed, are called nibs; they are the purest form in which cocoa can be purchased, being the kernel deprived of its husk and unadulterated. Their structure, exposed by the microscope, is seen to be that of minute rounded cells, which are filled with starch corpuscles and fatty matter. The fragments of the cells and the starch corpuscles may still be detected in the finely ground powder of the cocoa prepared for chocolate; and in this way the presence of undue proportions of the shells is exposed, as also of the numerous other matters used as adulterants. Cocoa should properly be the pure paste prepared by grinding the nibs between heated stones, and rolling into a flaky mass the oily product which flows out. This, when moulded and cooled, is called flake or rock cocoa; but the name of cocoa is often applied to compositions of the pure article with other substances, which properly come under the designation of chocolate. The oil of the cocoa is extracted for certain cosmetic unguents and applications for the hair.—The imports of cocoa into the United States in the year ending June 30, 1857, were 2,044,637 lbs., valued at $187,016.

COCOANUT TREE (*cocos nucifera*, Linn.), belonging to the natural order of palms, is a native of most places in the tropics, especially of islands and maritime sandbanks, and is often exclusively cultivated on extensive tracts of sandy soil, as on the coasts of Brazil and Ceylon, and throughout the East Indies. It has a straight, branchless trunk, from 50 to 80 feet in height, crowned at the top with immense feather-like leaves from 12 to 15 feet long. The flowers cluster around the top of the trunk, enclosed in a sheath, and are succeeded by nuts, 10 or 12 of which are usually bunched together. The tree begins to bear fruit in its 6th or 7th year, blossoms about once in 6 weeks during the rainy seasons, and produces annually 8 to 12 bunches, or about 100 nuts. Few trees are so variously useful. The leaves are employed for thatching houses, and resist for several years the action of the wind and rain; from their finest fibres a beautiful matting is made, which is an article of considerable commerce in the East Indies; their coarser fibres furnish brooms and baskets; their ashes yield potash; their midribs are made into oars; and the thinner portions are also used as material for writing. On the top of the tree a cabbage-like shoot projects, which, though of delicious taste, is seldom eaten by the natives, because its removal exposes the pith and causes the death of the tree. The trunk abounds in sap, which is best taken by incision into the flower-buds at the top. At first differing little from water in color or consistence, it is esteemed an agreeable and cooling drink, and is sold in the bazaars under the name of toddy; it ferments after a few hours, acquiring a sharp taste and intoxicating quality, in which state it is known as palm wine; and by distillation from this the pernicious and strong ardent spirit known to Europeans as arrack is obtained. A poor quality of sugar is also prepared from it, which boiled with quicklime makes an excellent cement. This sap is daily collected by persons climbing to the top of the trees. The nut is enclosed within a husk, and at first contains from 1 to 2 pints of an agreeably flavored liquor, which gradually diminishes, being absorbed in the white pulpy substance which lines the interior of the shell. This inner substance acquires the hardness of an almond, is an ordinary article of diet among the natives, and is wholesome food unless kept too long before eating. The oil extracted from it is valued hardly less than the oil of sweet almonds. From the shell itself drinking cups are made, and the external fibrous husk is the principal material of Indian cordage, is thought more durable than any other vegetable fibre, and is exported in large quantities from India and Ceylon to England. When the cocoanut has attained about half its size, it contains a cream-like substance, which in the West Indies is eaten with a spoon, sugar and orange blossoms being added to it, and is esteemed a delicacy. The 3 scars on the base of the shell indicate the places through which the 3 germinating embryos would pass. Two of these being constantly abortive, only one of the scars is soft enough to allow an easy passage.

COCO-MARICOPAS, a tribe of semi-civilized Indians, living upon the river Gila, New Mexico, about 150 m. above its mouth. They occupy a portion of the rich alluvial valley found there, in common with another tribe known as the Pimos, which holds the same rank in civilization. The valley is there about 15 m. in length, and from 2 to 4 m. in width, nearly the whole of which is occupied by the villages and cultivated fields of these two tribes. The Pimos occupy the eastern portion. There is no dividing line between them, nor any thing to distinguish the villages of one from those of the other. The whole of this plain is intersected by irrigating canals from the Gila, by which they are enabled to control the water, and thereby raise luxuriant crops. The villages consist of groups of from 20 to 50 habitations, surrounded by gardens and cultivated fields, the latter fenced with crooked stakes wattled with brush. Their houses are built with stakes, poles, corn husks, and straw. The stakes, which are inserted in the ground, are the main support of the structure. Around these is a circular row of poles, bent over and united at the top. Smaller poles are now horizontally interlaced with the upright ones, and between them straw, corn husks, and rushes are interwoven, so as to shed the rain, and protect them from the intense heat of the sun; some are then plastered over with mud. These habitations are from 5 to 7 feet in height, and in diameter from 15 to 25 feet. There is usually a bower or shed attached to each wigwam, open on all sides, beneath which the occupants are generally seen engaged in their household duties, only resorting to their better protected abodes in cool or rainy weather. Beside the dwelling places, each family is provided with a storehouse or granary, which are better built than the former. The wheat and shelled corn (maize) are put into large vases or baskets, from 2 to [illegible] feet high, made into graceful forms from ropes

aten straw. The vases so formed contain
0 to 15 bushels of grain. In smaller ones
ns, while around the floor are pumpkins,
es, and other vegetables. On the top of
wigwams and granaries may often be
les of the mesquit bean (*algarobia glan-*
) in the pod, which are there placed to
eparatory to being ground into flour for
They possess horses, mules, and horn-
When ploughing is resorted to, oxen
used; but they prefer to use their hoes
ing up the light soil. With this simple
nt and a long-handled spade, they are
to cultivate as much ground as they
The men generally plant and gather
ps. The food of these people is chiefly
made both of the flour of wheat and
and vegetables. Little meat is used.
hey sometimes catch, though they care
r them. Their grain is ground, or rather
l, on *metates*, or stones; it is a work of
abor, and is wholly performed by the
on their hands and knees. The duty
women is also to take care of the chil-
ake baskets, gather mesquit beans, help
nes to gather the crops, and to spin and
But that which elevates these abori-
bove most other tribes is their knowl-
the art of spinning and weaving, an art
to the semi-civilized tribes of New
before the arrival of the Spaniards.
of a superior quality is raised by them,
they spin and weave into blankets of
textures and sizes, a heavy cloth used
women to wrap around their loins, and
cle from 3 to 4 inches wide, used as a
or the head, or a girdle for the waist.
plements used for spinning and weaving
the most primitive character. A slender
bout 2 feet long, passing through a block
d which serves to keep up the momen-
rted to it, constitutes the spindle.
of this rests on a wooden cap inserted
en the toes, and the other is held and
d by the fingers of the right hand; while
hand is occupied in drawing out the
rom the supply of cotton, which is coil-
the arm in loose rolls. In weaving,
is attached to two sticks, and stretched
ground by means of stakes. Each al-
hread of the warp is passed round a
cane, which, being lifted, opens a pas-
or the shuttle in the manner of a sley.
perator sits in the fashion of a tailor, and,
the sley with one hand, with the other
he shuttle, which is simply a pointed
with the thread wound upon it, between
reads of the warp. The work is beaten
er the passage of each thread by the use
sharp, smooth-edged instrument made of
wood. Weaving is generally done by the
en. The other manufactures of the Coco-
opas are baskets and pottery. The basket
is remarkably well made of willow twigs,
rious shapes, and used for different pur-
Those of a large basin-like form are the most common, and when filled with corn or other articles are always carried on their heads. Their pottery is either red or dark brown, some of it quite fine, though not equal to that made by the ancient tribes, fragments of which cover the adjacent grounds. It consists of vases and cups holding from half a pint to 6 or 8 gallons; jars with small apertures; basins of every size, and oblong vessels used as dippers. These are all painted with black lines arranged in geometrical figures. The ornaments on their pottery and their cotton manufactures closely resemble those on the pottery found among the ancient ruins and sites of ancient towns throughout New Mexico. They resemble, too, the ornaments of the Pueblo or semi-civilized Indians of the country, which leads to the inference that the Coco-maricopas, the Pimos, and the Pueblo Indians generally, are descendants from the ancient people who have left so many remarkable works in the great basin of the Colorado, and in other parts of New Mexico. The dress of the women is simply a cotton blanket or cloth wrapped around their loins. Sandals of raw hide are worn on the feet. Nothing is worn on the head, nor is the hair ever tied up. In front it is cut off square across the eyebrows; the rest is suffered to hang loosely over the ears, neck, and half-way down the back. It is a universal custom among the women, when they arrive at maturity, to draw two lines with some blue-colored dye from each corner of the mouth to the chin. This is pricked in with a pointed instrument, and remains through life. The men generally go naked, except the breech cloth. In cool weather they throw one of their native blankets over their shoulders. Much pains is taken in decorating the head. They wear their hair long, never cutting it except across the eyebrows. When loosed, it reaches to their knees; but usually it is clubbed up in a large mass on their backs. This people restrict themselves to a single wife. They believe in the existence of a great spirit and in an existence after death; that their souls go to the banks of the Colorado, their ancient dwelling place, where they are metamorphosed into various animals and birds; they believe, too, that the feuds which have existed on earth between them and other tribes, will continue after death. The Coco-maricopas lived originally on the Colorado, but were found about 50 miles beyond their present location early in the last century. In 1775 Father Font found them on the river Salinas, 10 or 20 miles from the Pimos. Subsequently they removed for protection to the valley occupied by the Pimos, with whom they live on terms of the greatest harmony, and have adopted their customs. Their languages are totally different. The language of the Coco-maricopas has a close affinity with that of the Yumas of the Colorado, and Dieguenos or Comeyas of California. The two tribes number about 2,000 souls, of which ¼ are Coco-maricopas.

COCOON, an oblong ball or case, in which the silkworm involves itself, formed by the very fine filaments from which silk thread is made. The term is also applied to the envelope of other larvæ during their pupa state. (See BUTTERFLY, CATERPILLAR, and SILKWORM.)

COCOPAS, a tribe of Indians, allied in language to the Yumas, living upon the Colorado river of California, between the mouth of the Gila and the gulf of California. They number less than 500 souls, and live by cultivating the soil. In the report of Don José Cortes to the king of Spain, made in 1799, this tribe is mentioned as then embracing 3,000 souls.

COCYTUS, in antiquity, a river in Epirus, deriving its brackish water from the melted snow of Mount Pindus, and emptying, after a course underground, into the Acherusian lake.—Also a river of the infernal region, a tributary of the Styx, emptying with the Pyriphlegethon into the Acheron.

COD (*morrhua*, Cuv.), a genus of fishes belonging to the family of *gadidæ*, characterized by an elongated, smooth body, compressed toward the tail; 3 dorsal fins; ventral fins pointed; abdominal line with 2 fins behind the vent; the lower jaw with one barbule on the chin. There are 8 species described as occurring in North America. The American cod (*M. Americana*, Storer) is the common species of the New England coast, ranging from New York to the St. Lawrence river. The color of the back in the living fish is a light olive-green, becoming pale ash in dead specimens, covered with numerous reddish or yellowish spots to a short distance below the lateral line; beneath it is dusky white. The color of this species, however, is variable; some are of a greenish-brown hue with few spots; others, called rock cod, are of a bright red color; some are very dark, others very light and greenish. This species grows to a great size; the largest specimen alluded to by Dr. Storer, in his "Report on the Fishes of Massachusetts," weighed 107 lbs.; the average weight is about 80 lbs.—The common, or bank cod (*M. vulgaris*, Linn.), well known the world over as an article of food, is taken on the Grand Banks, in the deep water off the coast of Newfoundland, Nova Scotia, and Labrador, and indeed is met with from the coast of Maine to 67° north latitude. It is a thick, heavy fish, sometimes attaining a weight of 90 lbs. The color varies considerably, but is generally a greenish brown, fading into ash in the dead fish, with numerous reddish-yellow spots; the belly is silvery opaque white, the fins pale green, and the lateral line dead white.—A 3d species, the tomcod (*M. tomcodus*, Mitchill), is found along the American coast from New York northwardly to Nova Scotia and New Brunswick, at all seasons of the year; it frequently ascends rivers. It varies in length from 6 to 12 inches. The colors also vary exceedingly, being generally brownish above with spots of a darker hue, and lighter beneath. The tomcod is caught from wharves and bridges by almost any bait; in the winter large numbers are taken in dip nets at the mouths of rivers. Dr. Storer states that 2,000 bushels of this fish are sent annually to Boston market from the single town of Watertown, Mass., and there meet a ready sale.—The cod is an exceedingly voracious fish, devouring indiscriminately every thing in its way in the shape of small fish, crustacea, and marine worms and shellfish. Indeed, the cod is the great collector of deep-sea specimens, otherwise unattainable; and many are the specimens of rare and new shells which naturalists have obtained from its capacious stomach.—The cod fishery commences about the 1st of June and continues till the end of November. The usual baits are the capelin (*mallotus villosus*, Linn.), herring, mackerel, lobsters, crabs, clams, and mussels. This fishery is carried on principally by vessels of about 80 tons burden from the ports of Newfoundland, Canada, and Nova Scotia, and from most of the towns of the Massachusetts coast between Cape Ann and Cape Cod. Each vessel carries a boat for every 30 tons burden, and there are 2 men employed in each boat: the fishing in good weather is done from the boats, which are expected, if fish are plenty, to get 2 loads every day. Beside hand-fishing, the "bultow" mode, introduced by the French, is extensively used both in the coast and deep-sea fisheries. The bultow consists of a line sometimes 3,000 fathoms long, with hooks fastened along its whole length on snoods 6 feet long, about 12 feet apart; buoys and anchors are attached to each end of the line, which is placed across the tide to prevent the hooks from becoming entangled. The lines are set toward evening, and at daybreak next morning will be found loaded with several hundred large fish, dead from drowning. The bultow is the best mode of fishing, as it is less expensive in outfit of lines and boats, secures larger and superior fish, and is always fishing for its owner without his personal attendance, and with a far greater number of hooks. The quintal by which the fish are sold is 112 lbs. of dry fish: when first caught, 80 large sized, or 113 small fish are reckoned to the quintal; it is considered a good day's fishing for a boat to take 10 quintals of fish, which is frequently done. When the boats return at night, the fish are split and cleaned; they are then washed and rubbed with salt, in which they remain a week: after another washing, they are placed in piles to drain; after draining 24 hours, they are spread on long wicker frames to dry; they are cured in about 3 weeks, requiring frequent turning to prevent their being sun-burned. The livers are preserved for the manufacture of cod-liver oil, at the present time extensively used in the treatment of pulmonary diseases. There are nearly 2,000 vessels, with a tonnage of over 100,000 tons, and employing 10,000 men and boys, engaged in the bank or cod fishery of the United States. The product of these is annually about 600,000 cwt. of fish, valued at about $2,000,000; the oil from the livers is valued

000 more; the government bounty paid wners of the vessels engaged exceeds).

AZZI, Agostino, an Italian engineer, ar Ferrara in 1792. He made several ns under Napoleon, and afterward dised himself as an engineer in South . He entered the Colombian service rank of lieutenant-colonel of artillery, employed in making charts and in prelans of defence. In 1831 he was apby Gen. Paez to prepare partial charts ew republic of Venezuela. This work nearly 9 years, and was twice interby military defensive expeditions, in odazzi took part. He was rewarded rank of colonel. He devoted the years to exploring the wilderness of Guiana, trated nearly to the sources of the Ori-This expedition was attended with the fatigue and exposure. The important s to geography which were obtained induced the congress of Venezuela to im means to make public the result of . For this purpose he went to Paris, work appeared in 1841, accompanied sive chart of Venezuela. Codazzi u established a German colony in Vene-In 1848 he was employed by the govof New Granada in a topographical f that country.

DINGTON, William, founder of the colhode Island, born in Lincolnshire, Eng., died Nov. 1, 1678. He arrived by the ella at Salem in 1630, as one of the f Massachusetts appointed by the or some years he exercised his juditions, traded as a merchant in Boston, umulated considerable real estate at e. In 1636, when Winthrop superseded governor, Coddington's name was drophe roll, at which the latter expressed sfaction in various ways. The freewever, on the following day testified proval of his course by sending him and their deputies to the court. When Mrs. son was tried, during the Antinomian rsy, Coddington undertook her defence Winthrop and his party. He also opproceedings in the case of Wheeld others, but unsuccessfully. Becomied of opposition, he removed with 18 March, 1638) to the island of Aquet-Rhode Island, having drawn up ed an agreement to found a colony hould be "judged and guided by the laws of Christ." This was found for actual requirements. Coddingtherefore, elected judge, with a counelders, who were enjoined by a vote reemen to be guided by God's laws. ngement was further modified, March , by the election of Coddington as govith a lieutenant-governor and 4 assiste continued in office 7 years, until a was obtained and the island incorporated with the Providence plantations. In 1648 he was again offered the governorship, but declined it in consequence of a suit he was engaged in respecting lands. Having made a voyage to England in 1651, he returned with a commission as governor of Aquetneck island, separate from the rest of the colony; but the people being alarmed at the attempt to deprive them of the nomination of their rulers, he resigned. From this time he withdrew from public affairs until 1674-'5, when he once more accepted the governorship. Coddington, after his settlement in Rhode Island, adopted the tenets of the Quakers. He was a good specimen of the man of the time, prudent and active in administration, zealous for his principles, and earnest for liberty of conscience.

CODE (Lat. *codex*, manuscript, originally designating any writing, but afterward used specially for a law, or some form prescribed by law; hence *codicillus*, the diminutive of *codex*, was a supplement to a will). In jurisprudence this term is applied to a compilation of laws made by public authority. In a popular sense it is understood to be a complete body of law, or if it relate to a particular subject, that it is to that extent complete; in other words, that if it be intended as a general system of laws, it supersedes all previously existing laws not embraced in it; and so of a partial code, that so far as it goes it excludes all other sources of decision. This is, however, erroneous. No compilation of laws was ever made which was so complete as to provide for all the cases that could arise. Positive or statute law is comparatively a small part of the laws of any country. There is always a law of custom growing out of the habits and peculiar circumstances of a people. Legislative authority may take hold of certain principles developed by custom and give to them the form of written law, but it will still be incomplete, and the deficiency must be supplied by the same process which in the first instance brought into exercise those principles which have been incorporated in the written law. A code of laws contains no inherent power of further production. Analogies may be furnished for many cases, yet even these will yield to the imperious force of changing circumstances and necessities. Other cases must incessantly occur, for the determination of which no analogy is furnished in the written law, and in these the constitution of society, from which a law of custom is continually germinating, must be the sole authority. Still more erroneous would it be to suppose that in any community a code was ever preënacted as the basis of social organization and civil rights, and that the national character was derived therefrom. The reverse of this has been the uniform course, so far as we have historic records, and it is only when these are deficient that the unsupported hypothesis has been substituted whereby a lawgiver is supposed to have moulded a whole people by his legislative enactments. There have indeed been governments, especially in eastern countries, which have had unlimited power to make and unmake laws without regard to the rights or wishes of the people; but this is only saying that a people may be subject to such a despotism as to be virtually without law, except the arbitrary will of an autocrat. Under a despotical government the laws may be enforced for a time, however unacceptable to the people; yet there is a limit beyond which no sovereign can go without the danger of revolution, as when he attempts to interfere with the ancient usages of the mass of the people. The form of the government may be changed, political rights abrogated; but customs generally prevailing in domestic life or social relations, or involving religious faith, if such customs have become venerable by their antiquity, cannot be wholly suppressed except by the entire subjugation of the people to a foreign enemy, nor even then unless by a perfectly merciless war, as when the Britons were conquered by the Anglo-Saxons. The common version as to the mode in which laws were established in the Grecian states is in great part fabulous. As to Crete we have no authentic records remaining; but as to Sparta, Thirlwall, in his history of Greece, maintains that Lycurgus, to whom is commonly attributed the formation of the constitution and laws of that state, in fact introduced no new principles in either the political or social organization of the people, but merely brought into systematic arrangement the usages previously existing, with some modifications or additional provisions essential to the conservation of the peculiar form of nationality already existing, and by a public enactment with a religious sanction gave permanence to the entire system as digested by him. The double lines of kings, the *gerusia* or council of elders, the assembly of the people, even the ephori, with less authority than they afterward acquired—all these existed before the legislation of Lycurgus; so also the distinction between Spartans and Laconians, and the still greater distinction between the former and their serfs the helots. Usages had grown up corresponding to this isolation of a small number in the midst of a numerous subject people, and it was for the carrying out more efficiently the design of these usages that Lycurgus prepared the code which thenceforth became the fixed law of Sparta.—In like manner the Athenian state was harmonized by the laws of Solon, but more particularly by his constitution of political powers. The archonship, the areopagus, and the council of 400 were constituent parts of the government before his revision of the laws. The assembly of the people had also taken some part in public affairs, but in a rude, irregular manner, without any fixed authority or prescribed mode of proceeding. Solon constituted it the chief legislative body, yet with the restriction that they were to consider only what was proposed by the senate. This restriction was afterward evaded, because the assembly could modify any proposition that came before them without sending it back to the senate for approval; and again, when a law was desired by the people, any one could present it to the senate and procure the preliminary action necessary for bringing it before the people. A still greater popular power was conferred by the judicial authority given to the dicasteries, which were composed of a large number of citizens, drawn by lot, presided over by one of the archons. The number of jurors in important cases was very large, sometimes including the whole body of citizens qualified to serve. An anomalous power was given to this tribunal in a proceeding called γραφη παρανομων, which was a prosecution of any one on whose motion a law had been passed by the assembly of the people, to rescind the law if deemed unjust or prejudicial to public interest. The other laws of Solon corresponded with this development of the popular element. All citizens over the age of 20 were entitled to speak and vote in the assembly, and to sit as jurors in the dicasteries; trade and manufacturing industry were encouraged, and intercourse with foreigners was promoted by giving to them greater privileges than were allowed by any other Grecian state. Still it appears that all his legislation was in consonance with the spirit of the people, and the particular laws were probably for the most part reënactments of customs already existing, but with some wholesome restraints or new provisions intended for the maintenance of the largest liberty within the proper limit of civil order.—The same principle is again exhibited in the Roman laws of the 12 tables. The account given by Livy is, that commissioners were sent into Greece to examine the laws and institutions of the principal states, and to transcribe the laws of Solon; that after their return, another commission (the decemviri) was constituted to draw up a code of laws, the result of which was the compilation of the 12 tables. But the laws of Solon were certainly not incorporated in the code of the decemvirs, nor, so far as we are able to judge of the original from the fragments remaining and the commentaries of Roman writers, was that code transplanted from any foreign state. Acquaintance with the laws of other countries might have suggested a systematic form, perhaps have furnished some analogy for a rule in cases not otherwise provided for; but the law of the 12 tables was essentially Roman, and was undoubtedly compiled from preëxisting sources peculiar to the Roman people. As in the legislation of Solon, so in that of the decemvirs, one great object was to quiet political dissensions between the aristocracy and common people. It had been a subject of complaint by the people that the consuls, who had the whole judicial power, decided arbitrarily—not that there was no law, but no sufficient sanction to prevent perversion; and the remedy proposed was, that the laws should be made certain, and that the patrician magistrates should be compelled to conform thereto (*quo omnes uti deberent*), which it was supposed would be accomplished by having the en out and published. This proposi- hat led ultimately to the appointment emvirs, and the laws which they re- e engraved first on wood and exposed m; after the destruction of the city ils they were engraved on brass, and ned as still existing in public view as 3d century of the Christian era. It d that the 12 tables constituted the e Roman law for 10 centuries; but o proper sense well founded. Itself custom (*mores majorum*), it consti- a fragment of the vast body of law orated by the energizing force political elements in all the diver- ions incident to a free and prosperous . The judicial discretion of the *æquum*), the opinions and writings *auctoritas prudentum*), the rescripts l court, and the decisions of *us receptæ*), were the volumi- of the Roman common law, upon legislative enactments (*leges*), stom (*mores*). *Pleraque in jure non l moribus constant*, says Quintilian. of the prætors, in which it was al- nally to incorporate new applications *æquum*, were in the reign of Hadrian Salvius Julianus, and the revision ed by the imperial council, from s it r ined substantially unchanged. this might be called a code of rs administered by the prætor. ordinances, or what we should call *ges*, *plebiscita*, and *senatus consulta*), paratively little addition to private related chiefly to political rights and of judicial administration. So the e senate and the edicts of the em- r the popular government was sub- ring a long period related chiefly to rs; and even when they related to , it was rather in the nature of a de- declaration of the law than any new The distinction between legislative al functions was little observed. The f the emperor (or of those authorized nswers in his name), for the resolu- ubtful cases; the decrees in actions eal before the imperial court; , as well those relating to the ad- n of the government as for the regu- rivate rights, were all embraced un- eral designation of *constitutiones prin-* ich was thus defined by Gaius: *Con- incipis est quod imperator decreto vel epistolâ constituit.* The great num- ese constitutions, and the crudity of hem, rendered compilations and com- indispensable. Among these the prin- he imperial decrees or decisions col- Paulus (*Imperialium Sententiarum in bus probatarum libri sex*); "Rescripts i Fratres," collected by Papirius Jus- pts of Hadrian, compiled by Dositheus; ion by Ulpian, in his work *De Officio Proconsulis*, of all the ordinances issued against Christians; and lastly, two general collections (*codices*) of constitutions from Hadrian to Constantine, the one by Gregorius, the other by Hermogenes (the latter a supplement to the first), both of which consisted chiefly, as is understood, of rescripts. All of these were private compilations, and do not strictly come under the definition of codes as given at the beginning of this article. The *Codex Theodosianus*, published A. D. 438, by order of Theodosius the younger, was a compilation of all the edicts of the emperors which were deemed important, and also many of the rescripts. This was a work of great importance, not merely as the initiative of the great work of digesting the whole Roman law afterward completed by Justinian, but for its influence upon several of the Germanic nations, by whom it was adopted or in some degree made the basis of their laws before the revision had been made which is now known by the name of *Corpus Juris Civilis*. The compilations made by order of Justinian, A. D. 527–535, viz.: the Institutes, Pandects, and code, and the new constitutions published after his death, A. D. 565, have been described in the article CIVIL LAW. In the same article will also be found an account of three of the barbaric codes, viz.: the edict of Theodoric, king of the Ostrogoths, A. D. 500; the *Breviarium Alaricianum*, issued by Alaric II. king of the Visigoths, A. D. 506; and the *Lex Romana* of the Burgundians, published A. D. 517–534. All of these were intended chiefly for Roman subjects. But there were also distinct laws for the barbarians themselves, which it will be proper to notice more in detail.—And first as to the Franks. There were 2 tribes, one called Salian (probably from the river Sala, or Yssel, upon which they were first established), the other Ripuarian (from the Latin *ripa*, the name expressing their location upon the banks of the Rhine). Both of these had separate compilations of laws, which continued in force even after the union of the 2 tribes under Clovis. Of the Salic law our knowledge is derived from manuscripts still extant, most of which are an unmixed Latin text, but others have an intermixture of Germanic words. The latter are entitled *Lex Salica antiqua* (or *antiquissima*, or *vetusta*), the other *Lex Salica recentior* (or *emendata*, or *reformata*). M. Wiarda, in a work entitled *Histoire et explication de la loi Salique*, has proved that none of the compilations are of an earlier date than the 7th century, and that the manuscripts containing Germanic words and purporting to be the more ancient are in fact later in time than the others. The laws themselves he supposes to have been compiled after the Franks had become established in Belgium, and that they were originally written in Latin. He also concludes that they were not published as a code by public authority, but were compiled from customs and judicial decisions; and that they do not constitute all the laws of the Salian Franks. The earliest historical notice of any such compilation is in the 8th century, in a work called *Gesta Francorum*. M. Guizot (*Histoire de la civilisation en France*) deduces from a critical examination of all the manuscripts that the law is essentially penal. It contains 343 penal articles, and only 65 upon all other subjects. The nature of the crimes and punishments which are specified indicates an exceedingly rude condition of society. There is no generalization, but a chaotic mingling together of the various individual cases of crime that might occur in an uncivilized community, without definition, classification, or any arrangement. One peculiarity is observable, which indeed may be found in the laws of all the Germanic nations at an early period, viz.: the extreme mildness of punishments as respects free men, whether Franks or Romans. Pecuniary composition, *Wehrgeld* or *Wedrigeld* (prohibition money), was the only penalty prescribed by the Salic law, and this only as a substitute for the right of the injured party to take personal vengeance; but if accepted, the law merely fixed the amount. In respect to slaves it was different; they were subject to cruel corporal punishments, imprisonment, and death. Another peculiarity, which also belonged to the laws of other tribes, was the mode of proof in judicial trials. This was by the oath of compurgators or conjurators, that is to say, a certain number of the friends of the accused who deposed that he had not done what was imputed to him; and on the other hand, conjurators could be produced by the accuser. There was no examination of witnesses nor discussion of the facts, but a simple attestation under oath of the truth of the charge or a denial thereof. The laws of the Ripuarian Franks were essentially the same as those above described, with only the following distinguishing circumstances: 1, that there is more of precision and legislative form, and that the subjects are less exclusively penal; 2, that the mode of proof by compurgators or conjurators is more distinctly regulated; 3, judicial combat is recognized as a mode of deciding controversies. This custom seems to have been intended as a check upon the right of private revenge. If the offended party insisted upon personal vengeance, then it was to be subject to certain terms, and was to be in the presence of witnesses. The Ripuarian laws, it is supposed, were compiled in the 7th century. The laws of the Burgundians are of an earlier period, probably between the years 468 and 534, the latter being the date of the final conquest of the Burgundians by the successors of Clovis. The chief characteristic of those laws is that they apply to Romans and Burgundians alike, and that civil rights and procedure are more prominent than in the laws of the Franks, probably by reason of the great interfusion of Roman law.—The Capitularies of Charlemagne, and several of his successors, have been commonly classed among compilations of laws. They are, in truth, the acts of the government in all its functions, including instructions to magistrates, financial regulations, political, civil, and canonical legislation, judicial decisions, even moral precepts and propositions or questions for consideration. Guizot has arranged the acts of Charlemagne into 1,150 articles. Of these the greater proportion belong to canonical legislation, including under that term the acts of councils and the ordinances of the emperor in relation to affairs of the church. The next most considerable subject is political legislation, relating to administrative offices, courts, and police, and is contained in 293 articles. Penal provisions are numerous, but differ little in character from the previous penal laws of the Ripuarians, Lombards, and other barbarian nations who had become subjects of Charlemagne. There is one exception, in the severity with which he punished the conquered Saxons. Legislation concerning private rights is comparatively inconsiderable. Among the Capitularies are some additions to the ancient laws, as the Salic, Ripuarian, the laws of the Lombards, Bavarians, &c.: there are also extracts from these laws, which were probably intended for some particular purpose. It is said that a revision of the Salic law, and of the laws of the Lombards and others, was made by order of Charlemagne, but only fragments of such revision appear in the Capitularies. In fact, the Capitularies themselves are but fragmentary, many of them being imperfect, and others being referred to which are lost. The most complete edition of the Capitularies was published by Baluze (Paris, 1677).—The laws compiled by Alfred the Great in the 9th century have been celebrated as the supposed origin of the peculiarities of the English common law. Trial by jury is commonly referred to this monarch as if first introduced by him. But this is certainly not sustained by authentic evidence. It was a familiar principle in the usages of all the Germanic nations that a free man should be tried only by his peers. The number of 12 to constitute a jury may have been prescribed by Alfred, and thus have given rise to the idea that the mode of trial originated in his time. In the laws attributed to him we find the same general characteristics as in those of the Franks and other Germanic nations, pecuniary compositions for every species of crime, proof by [illegible] purgators, and the like. A law w[illegible] enacted by Alfred, making wilful [illegible] capital offence, but it seems not to [illegible] enforced. There is one provision in [illegible] which may have originated in t[illegible] of the sovereign, but more probably [illegible] regard which the Anglo-Saxons had for [illegible] house as being sacred, which feeling has [illegible] transmitted to their descendants [illegible] this day. If a man who had [illegible] jury should keep within his own house, [illegible] versary might besiege him for 7 days [illegible] attacking him; but if within that [illegible] sieged person should be willi[illegible] to [illegible] himself and his arms, his adve[illegible] him 30 days, but after t[illegible]

his kindred, and be content with the
ion prescribed by law. Trial by or-
other superstitious methods, appear to
en frequent among the Anglo-Saxons.
l combat, if in use at all, was seldom
l to until the Normans substituted it in
f compurgation.—Coming down to a
ecent period, we find a peculiar law of
developed under the feudal system,
lly in France. In the southern part of
chy, which had been occupied by
hs and Burgundians, the Roman
nstitutions, judicial forms, and rights
y, were to a considerable extent pre-
That part of the country was for that
called *pays du droit écrit.* Yet even
some districts, many peculiar customs
coutumiers) were established in the feu-
rchy. In other provinces, especially the
n, the Roman law was almost entirely
least was no longer distinguishable,
w system succeeded, of various charac-
rding to the degree of independence
ned by the great feudal lords; and these
es were designated as *pays du droit cou-*
The laws of Normandy are the most
nt, on account of their bearing on the
law of landed property. The customs
ty of Paris were next in importance,
regarded as precedents in other
y of these local systems were
in the *Établissements de St. Louis.* In
of Charles VII., A. D. 1453, it was de-
y the assembly of the states, that all
y laws should be reduced to writing.
t into distinct and recognized legal
e a vast number of systems, a collection
ral hundred of which has been made by
t de Richebourg (*Coutumier général*,
724.) This diversity, instead of being
l by general legislation as the authority
crown increased, was only made more
ed by *ordonnances* not founded upon
ensive principles, and therefore hav-
endency to assimilate the heterogeneous
ts before existing. Collections of these
ances were repeatedly made, some of
received the inappropriate designation of
as the *Code Henri*, made by Brisson in
gn of Henry III.; the *Code Murvillac*
hau, under Louis XIII., 1629, relating
ial procedure; and the *Code Louis XV.*,
ussepierre, containing the ordonnances
722 to 1740. Several comprehensive
ances, which were in fact codes of laws
to particular subjects, were enacted
reign of Louis XIV. But the necessity
neral compilation, and the assimilation
the different systems into a homoge-
urisprudence for the use of the whole
became more and more pressing, till
olution paved the way for its accom-
nt. It was early the subject of discus-
d projects were reported by Cambacérès
and 1795, which, though incomplete in
and on the whole unsatisfactory, yet furnished a perspicuous and well arranged outline. By a consular decree, Aug. 12, 1800, a commission was constituted "to compare the order which had been followed in the preparation of the projects for a civil code hitherto published, to determine the plan which the commissioners should think best to adopt, and to discuss the chief principles of civil legislation." Portalis, Tronchet, Bigot de Préameneu, Maleville, and the minister of justice were the commissioners. In 1801 they reported a draft of a civil code, which was submitted to the court of cassation and other courts of appeal, and with the reports of the judges was finally brought before the council of state, in which Napoleon (then first consul) presided in person. The discussion, which was consecutive and thorough, may be found in a work entitled *Conférence du code civil, avec la discussion particulière du conseil d'état*, &c. (Paris, 1805). In the discussion and adjustment of the code, Tronchet, Roederer, Portalis, Thibaudeau, Cambacérès, and Le Brun were the most conspicuous. Of these, Tronchet was the most regarded by the first consul for profound and enlightened views; Le Brun was the best qualified as a *rédacteur.* In the same manner the other codes were reported, discussed, and amended. The whole revision was finally adopted under the title of *Les cinque codes*, consisting of the civil code (which, as the first in order, and most important, was distinguished by the appellation of the *Code Napoléon*), the code of criminal procedure, penal code, code of civil procedure, and code of commerce. Another was added by Charles X. (1827), entitled the *Code forestier*, which is a collection of laws relating to the administration of the wood lands belonging to the king, or to cities, villages, &c.; and the whole is now published under the title of *Les six codes.* Of the merits of this great work we have sufficient evidence from the fact that it still continues, with but little change, to be the law of France, notwithstanding the subversion of the government by which it was established. The extent of its influence upon the laws of other countries can as yet hardly be estimated. It is admitted by common consent to be entitled to rank next to the compilations of Justinian among legislative contributions to legal science.—In Germany, until a recent period, the laws, both civil and criminal, have been in a state of great confusion. In 1532, the statutes commonly known as the *Carolina Criminalis* were enacted by the emperor Charles V. for the regulation of criminal proceedings. Prior to that time the law of the empire relating to crimes was threefold: 1, the Germanic, contained in the ancient barbaric codes and subsequent local usages; 2, the provisions of the Roman law in the compilations of Justinian, particularly the *Libri Terribiles* of the Digest, and the 18th title of the Institutes; 3, the various penal provisions of the canon law (*Corpus Juris Canonici*). The *Carolina Criminalis* purported to be "a simple instruc-

tion for unlearned judges, to teach them how to proceed in criminal cases." It did not supersede the previously existing laws, but referred to them, sometimes defining what was obscure, fixed punishments with more exactness, but more particularly regulated the form of criminal proceedings. Being in form rather didactic than statutory, a large license was taken by judges in administering the law as thus prescribed, and uncertainty still prevailed until a more thorough codification was finally resorted to.—The Prussian code was longer in preparation than the French, and is said by competent judges to have attained a high degree of practical adaptation to the wants of the people. The first revision of the Prussian laws was published by Frederic II., 1749–'57, and is known as the *Code Frédéric*. In 1780 a revision was ordered, which underwent much public discussion, and was finally published in 1794 under the title of *Allgemeines Landrecht*. The penal laws have been since repeatedly revised. In 1826 a commission was appointed to prepare a new penal code, in pursuance of which 6 different projects were successively reported and discussed at various times during a period of 25 years, and the code which is now in force was finally adopted in 1851. With the aid of the discussion which was brought to bear upon its provisions, and the knowledge derived from the practical working of the French penal code, it is said to be the most perfect system of criminal law which has been produced in Europe.—In Austria a code was adopted in 1811, founded in a great measure upon the Prussian code, and a code of criminal procedure was published in 1852, which adopts the classification of offences contained in the French penal code.—In the United States there has been but one experiment made of a legislative remodelling of the entire law. The state of Louisiana was originally a French colony; it was afterward ceded to Spain, when the Spanish law was introduced, but again reverted to the French, and from them was acquired by the United States. The complication which ensued from this intermixture of the laws of different countries, made a revision necessary, and a code was prepared and adopted, 1806–'8, which did not however supersede the ancient laws, except so far as they conflicted with the code. A further revision was found necessary, and in 1822 commissioners were appointed for that purpose, who reported a complete civil code, which was adopted in 1824, and superseded all previously existing French, Spanish, and territorial laws. Mr. Edward Livingston, one of the commissioners, and who, as is understood, had the chief part in the compilation, had been familiar with the common law, and introduced from it many valuable provisions, though the basis of the work was mainly the French civil code. A penal code and code of practice have been since added. In several other states, where the common law has prevailed, revisions of the statutes have been repeatedly made, in which many modifications of the common law have been incorporated. The most complete revision of this kind is contained in the "Revised Statutes" of the state of New York, which took effect in 1830. The code of procedure of the same state, adopted in 1848, and revised in 1849, relates to the civil practice of the courts, and has introduced very important changes.

CODEX (Lat.), in Roman antiquity, originally the trunk of a tree, afterward applied to the wooden tablets smeared with wax which were used for writing. At a later period it became the name of all large manuscripts (*codices manuscripti*), as the works of the historians and poets; and under the emperors and subsequently, it designated collections of civil and ecclesiastical laws. Of the last, the oldest and most celebrated are the *Codex Theodosianus*, the *Codex Justinianus*, the *Codex Canonum Ecclesiasticorum*, belonging to the time of Pope Innocent I., and the *Codex Canonum Ecclesiæ universæ*, revised by the monk Dionysius about 527. Its principal modern application is to the uncial manuscripts of the New Testament, as the *codices Alexandrinus*, *Vaticanus*, *Ephraemi*, *Bezæ* or *Cantabrigensis*, *Claromontanus*, 41 in all, which are also designated by the Roman letters, as codices A, B, C, D, or by combinations, as F^a, W^b, or by the Greek letters, as Δ, Θ.—CODEX RESCRIPTUS (Lat., a rewritten codex), now usually termed a palimpsest, an ancient parchment on which the original writing has been defaced, and upon which a different composition has been copied.

CODICIL (Lat. *codicillus*, a diminutive from *codex*, volume or roll), a testamentary disposition, made subsequently to a will, and by which the will is confirmed, explained, or modified, but in no case totally revoked. In the civil and canon law, and anciently by the common law of England, the distinction between a will and a codicil was, that in the former an executor was, and in the latter was not appointed. But the only difference between them now consists in their relation to each other. The codicil must be executed with the same formalities and proved in the same manner as the will itself. By recent statutes in England and in some of the United States, the term will is declared to include codicil. In ancient Rome the codicil was a distinct species of will, invented to mitigate the strict requirements of the law, and to make *fidei commissa*, or trusts, valid.

CODOGNO, chief town of the district of the same name in the province of Lodi-Crema, in the Austrian dependency of Lombardy, situated between the Po and the Adda, noted for its silk manufactures, and for being the principal mart in Italy for Parmesan cheese; pop. 9,632. The Austrians were defeated here in 1746 by the Spaniards, and in 1796 by the French.

CODRINGTON, SIR EDWARD, an English admiral, born in 1770, died in London, April 28, 1851. He became a lieutenant in the navy in 1793, and served on board Lord Howe's flagship at the victory over the French, June 1, 1794 ward he obtained command of the met, was made a post-captain, com- Babel, of 22 guns, in Lord Bridport's L'Orient, and, in command of the d, assisted in the capture of a French men on their way to join the Irish At the battle of Trafalgar he com- Orion, 74. Subsequently he was he bombardment of Flushing; also 's expedition to the Scheldt; in the Cadiz; and commanded a squadron French on the coast of Catalonia. was promoted to the rank of rear- ng at the same time employed as cap- et under Sir Alex. Inglis Cochrane can station. On July 10, 1821, he -admiral, and in 1826 was placed in the fleet in the Mediterranean, em- watching the events of the Greek He was, in this capacity, in chief the combined British, Russian, and it the battle of Navarino (Oct. 20, though that action was spoken of ish government as an "untoward was rewarded both by England and

ILLIAM JOHN, son of the preceding, commander-in-chief of the British the late war in the Crimea, was entered the Coldstream guards in through the successive grades to r-general, which he attained in tion having left him unattach- army in the East as an amateur, mander-in-chief, Lord Raglan, soon 1st brigade of the light division, played a distinguished part at the Alma and Inkermann; and when orge Brown was wounded, he suc- e command of the light division. He attack on the redan, but his con- at occasion subjected him to depre- ments from some quarters. On the of Gen. Simpson he was appointed f command, and in that capacity troops home. He was elected mem- ment for Greenwich in April, 1857.

, son of Melanthus, and the last king eigned, according to tradition, about When Attica was invaded by the aclidæ from Peloponnesus, the oracle that people would be victorious should be slain. Codrus, having termined to sacrifice himself, en- amp of the enemy in disguise, pro- lent quarrel with the common sol- was slain in the fray. The Do- g learned the death of the Attic ined from hostilities and returned the Athenians, thinking no one wor- d Codrus, abolished the kingly dig- tuted in its stead the office of on, son of Codrus, was the first

CIENT, in algebra, the quantity by other and generally unknown quan- tiplied. A differential coefficient is the quantity by which the rate of change in a varying quantity must be multiplied in order to find the rate of change in some other quantity dependent on this varying quantity for its value.

COEHORN, or COHORN, MENNO VAN, baron, a Dutch general and engineer, born in Friesland in 1641, died at the Hague, May 17, 1704. At the age of 16 he received a captain's commission, distinguished himself at the siege of Maestricht, and afterward at the battles of Senef, Cassel, St. Denis, and Fleurus. During the intervals of active duty he devoted much attention to the subject of fortification, with the view of equalizing the chances between besiegers and besieged, the new system of his contemporary Vauban having given great advantages to the latter. While comparatively a young man he gained a name as an engineer, and by the time he had reached middle life was recognized as the best officer of that arm in the Dutch service. The prince of Orange promised him a colonelcy, but being rather remiss in fulfilling the pledge, he retired in disgust with the intention of offering his services to the French. His wife and 8 children, however, were arrested by the order of the prince as hostages for his return, which quickly brought him back, whereon he received the promised rank, and was afterward appointed, successively, as general of artillery, director-general of fortifications, and governor of Flanders. His whole life was spent in connection with the defences of the Low Countries. At the siege of Grave, in 1674, he invented and for the first time made use of the small mortars, called cohorns, for throwing grenades, and in the succeeding year elicited the applause of Vauban by successfully crossing the Meuse, and carrying a bastion which was considered as protected by the river. After the peace of Nimeguen (1678), he was employed in strengthening various already strong places; Nimeguen, Breda, Mannheim, since dismantled, and Bergen-op-Zoom attest the value of his system. The last-named place he considered his masterpiece, although it was taken after a long siege in 1747, by Marshal de Lowendal. During the campaigns from 1683 to 1691, he was in active service. The siege of Namur, in 1692, gave him an opportunity to test his system against that of Vauban, for these two great engineers were there opposed to each other, Coehorn in defending a work which he had constructed to protect the citadel, and Vauban in attempting to reduce it. Coehorn made an obstinate defence, but being dangerously wounded, was compelled to surrender to his rival, who handsomely acknowledged his bravery and skill. He was afterward engaged at the attack on Trarbach, Limburg, and Liége, and in 1695 aided in retaking Namur. In the war of the Spanish succession he besieged successively Venloo, Stephensworth, Ruremonde, Liége, and in 1703 took Bonn, on the Rhine, after 3 days' cannonade of heavy artillery aided by a fire of grenades from 500 cohorns. Next he passed into Dutch Flanders, where he gained several successes over the French, and directed the siege of Huy. This was his last service, for he died soon afterward of apoplexy, while waiting a conference with the duke of Marlborough on the plan of a new campaign. Coehorn's greatest work, *Nieuwe Vestingbouw*, was published at Leeuwarden, in folio, 1685, and translated into several foreign languages. His plans are mostly adapted to the Dutch fortresses, or to those which are similarly situated on ground but a few feet above water level. Wherever it was practicable, he encircled his works with two ditches, the outermost full of water; the inner dry, and usually of the width of about 125 feet, serving as a *place d'armes* for the besieged, and in some cases for detachments of cavalry. The theory of his system, both of attack and defence, was the superiority of a combined mass over isolated fire. Professionally, Coehorn was accused of wasteful expenditure of life, in which respect he contrasted unfavorably with Vauban, who was sparing of men. Personally, he was blunt, honest, brave, and a hater of adulation. He refused inducements offered by several foreign governments. Charles II. of England knighted him. He was buried at Wijkel, near Sneek, in Friesland, and a monument was dedicated there to his memory.

COELLO, Claudio, a painter, born in Madrid, of Portuguese parents, died in 1693. He excelled both in color and design, and was made painter to Charles II., for whom he executed many works in the Escurial. His chief work is the altarpiece in the sacristy, representing the ceremony of the collocation of the host. His works are numerous in Madrid, Salamanca, and Saragossa.

CŒLUS (Lat., Heaven), by the Greeks called Uranus, in the ancient mythology, was the son of Æther and Dies, and the predecessor on the throne of heaven of Saturn and Jupiter. He married Terra, and was by her father of Oceanus, the Cyclops, Saturn, and others. Having imprisoned the Cyclops in Tartarus, he was emasculated and driven from the throne by his son Saturn, at the instigation of Terra.

COEMPTIO, a form of marriage among the ancient Romans. Each of the parties gave the other a small piece of money, and the man asked the woman whether she desired to become his wife and the mistress of his family; to which she replied that she did, and put to him a corresponding question. A ceremony of manumission, also called coemptio, was performed by women in order that they might be able to make wills.

COËSSIN, F. G., a French mystic, born at Lisieux, Normandy, in 1782, died in 1842 or 1843. At an early age he became associated with Clouet in attempting to found a model republic in Cayenne. The scheme failed, and Coëssin returned to France, and turned his attention toward a religious reformation, founding for that purpose a retreat known as the *maison grise*, at Chaillot, where disciples were prepared for reception of the truth by a severe course of alimentary abstinence. With the increase of members the establishment was removed to Paris, where he developed the second step of his system, of which a leading feature was the influence of female society in elevating to a higher degree of perfection. Dissensions arising, Coëssin embraced the opportunity of the invasion of 1814 to break up the institute. The remainder of his life was passed in comparative obscurity, chiefly in Rome. He published his views in a work entitled *Les sept livres*, Paris, 1809.

CŒUR, Jacques, a merchant, and royal treasurer of France, born at Bourges toward the end of the 14th century, died Nov. 25, 1456, in the island of Scio. His vast commercial enterprise attracted the attention of Charles VII., who in 1435 appointed him master of the French mint, and afterward treasurer. His excellent management of affairs caused the king to ennoble him, and to intrust him with high functions in the French provinces, and with diplomatic missions in Italy. Cœur contributed 200,000 crowns to help the king in rescuing Normandy from the English. After the successful end of the war, his influence became so great as to give offence to envious persons, who after the death of the king's mistress, Agnes Sorel, charged him with having poisoned her, and caused him to be arrested (1451), and his vast property to be confiscated. Although the charge was proved to be groundless, he was detained in prison until 1455, when he effected his escape. Repairing to Rome, he was kindly received by Pope Nicholas V., and was enabled to gather the broken remains of his fortune. Pope Calixtus III. selected him in 1456 as captain-general of a fleet against the Turks. On this expedition, Cœur was overtaken by illness, died, and was buried in the church of the Franciscans at Scio. He had vainly claimed the clemency of Charles VII. in favor of his family. It was under Louis XI. only that his memory was exculpated from all charges, while a part of his property was afterward restored to his descendants.

COFFEE (Turkish, *kahve*), the seeds of the plant *coffea Arabica*, of the order *cinchonaceæ*; also the beverage prepared by infusion or decoction of them in boiling water. In some [illegible] Abyssinia the plant grows wild in g[illegible]sion over the rocky surface of the [illegible] and there it has been in use from very [illegible] times. It also grows wild in Liberia. It [illegible] cultivated in tropical regions, and t[illegible] warm situations upon the slopes of hills, [illegible] soil not retentive of the rains that [illegible] The plant is a tree attaining the height [illegible] eral of 8 to 12 feet, but sometimes even [illegible] Its trunk is covered with a gray-colored [illegible] and its white flowers grow in thick [illegible] around the branches. When cultivated, [illegible] ward growth is checked by topping, for convenience of gathering the fruit, and the slender and pliable branches then spread out and bend down like those of an apple tree. The [illegible] are raised from the seed in nurseries. [illegible] a year old are transplanted and set [illegible]

they are in full bearing, and may
o for 20 years or longer. The leaves,
ovate and pointed form, grow in pairs,
the other. They are 4 or 5 inches
h and shining, and of dark green
plant being an evergreen, the foli-
ays fresh; and though at certain sea-
blossoms suddenly appear scattered
dark leaves like flakes of snow, they
y ever entirely absent. They continue
while the fruit of former blos-
to maturity, and so the ripe
gathered at almost every season;
al harvests are usually two in the
the year. The fruit when ripe be-
finally dark purple. It resembles
the fleshy portion which surrounds
very sweet and palatable. Two of
of commerce form the seed of each
flat sides are opposed to each other
of the pulp, and are separated by
of this and by the tough membrane
ely envelopes them both. As the
pulp forms a sort of shell or pod,
necessary to remove by a process of
der to prepare the seed for market.
Indies the fruit is picked by hand
during the seasons of harvest; but
, where no rains prevail which would
rom the trees, it is allowed to remain
to fall, and is then shaken off upon
ad upon the ground. Its perfect
y be one reason of its very su-
y. It is next dried in the shade,
is afterward removed by the hands.
and West Indies and South America
is usually performed by exposing a
the fruit several inches in thickness to
the sun, so that fermentation takes
en the moisture has disappeared, the
s passed between a fluted roller and
board, and the pulp is then washed
he tough membrane is separated after
are dry by a similar process with a
of rollers. The chaff is next re-
l by winnowing. The quality is greatly
ved by age. Ellis states that the small
f Arabia will attain their seasoning or
g in 3 years; "but the worst coffee pro-
in America will in from 10 to 14 years
as good and acquire as high a flavor as
we w have from Turkey."—From
use of coffee was introduced into
early as A. D. 875, and into Arabia
tter country about the 15th century.
written accounts of the use of
are by Arabian writers of this period;
appears that in the city of Aden it be-
about the middle of this century a very
ar drink, first with lawyers, studious per-
those whose occupations required
s at night, and soon after with all
its use gradually extended to other
and to those on the eastern shores of the
erranean. It is stated to have been pub-
old in Constantinople in 1554, and to have found its way thence to Venice in 1615. Rauwolf, a German (in 1573), is said to be the first European who makes mention of it. The plant is described in the works *De Plantis Ægypti* and *De Medicina Ægyptiorum* of Prospero Alpini, 1591 and 1592. Burton in his "Anatomy of Melancholy" (1621) is supposed to be the first English writer who notices it. "The Turks," he says, "have a drink called coffee (for they use no wine), so named of a berry as black as soot and as bitter, which they sip up as warm as they can suffer, because they find by experience that that kind of drink so used helpeth digestion and procureth alacrity." A Greek servant of a Turkey merchant opened the first coffee house in London in 1652. At the close of the century the annual consumption of coffee in the kingdom had amounted to about 100 tons. Its culture was introduced into Java from Arabia by the Dutch between 1680 and 1690, and it was thence extended throughout the East India islands. In 1715 Louis XIV. received from the magistrates of Amsterdam a fine coffee tree, then bearing both green and ripe fruit. This, according to Du Tour, was the stock of all the West India coffee. The Dutch introduced its cultivation into Surinam in 1718. The best coffee of commerce is the Mocha, and next to this the Java; but the principal supplies of the United States are from Brazil and St. Domingo, the former country furnishing 70 to 80 per cent. of the whole.—The raw coffee beans are tough and horny, difficult to reduce to powder, and consequently require a preparatory roasting, that water may take up their soluble ingredients. Even after this the hardness of the fragments is such, that the genuine particles may by this quality be distinguished from those of other substances used as adulterants. The raw coffee consists in 100 parts, according to M. Payen, of woody fibre 34, hygroscopic water 12, fat and volatile oil 10 to 13, glucose, dextrine, and vegetable acid 15.5, free caffeine 0.8, ash 6.7. Some authorities state that it contains from 6 to 8 per cent. of cane sugar; in the roasting this must be nearly or quite all converted into caramel. The most important principles are the caffeic acid, resembling in its astringent character, and also in containing much gluten, the tannin of tea; the alkaloid, caffeine, which is identical with the theine of tea; and the fragrant volatile oil, called caffeone. This oil is distinguished by the microscope in minute drops in the cells or between the outer membrane and the body of the seed, and may be taken up by distillation with water. Roasting disperses it through the solid substance, and in part or wholly expels it, if the process is pushed too far. The caffeic acid, especially, is modified by roasting, and is supposed by chemists to afford the greater portion of the flavor and peculiar properties of the coffee. The proportion of caffeine is only about ½ that of theine in an equal weight of tea. (See CAFFEINE.) Coffee when roasted loses its hygroscopic water, which should first be allowed to escape at a moderate heat from

an open vessel. The process may then be continued at a higher temperature in a vessel closed to prevent the escape of the aroma, and constantly agitated to avoid charring the grains and expelling the oil, by which its bitter quality is made to predominate and the aromatic is lost; a slight excess of heat injures the quality of the coffee. The process should be stopped when the beans are of a chestnut brown: they have then lost about 20 per cent. in weight and gained 50 per cent. in bulk. When removed from the fire, the vessel should be kept closed until cool, that the aromatic vapor may be reabsorbed as much as possible. After roasting, it deteriorates by exposure, and should therefore be soon used, unless kept in tight vessels. It may be injured by absorbing the odor of other substances. Even the raw coffee is liable to be damaged from this cause, and it is found objectionable to ship it in vessels that have been previously freighted with sugar; a few bags of pepper have spoiled a whole cargo of coffee. Freshly roasted and ground coffee tied up in linen has been found to ignite spontaneously. The same effect has also been produced with rice and barley treated in the same way. This often occurs to charcoal freshly prepared, as was noticed in this work, vol. iv. p. 716, in consequence of heat generated by rapid condensation of gaseous matters. After roasting, the coffee is ground to powder, and the finer this is, the more its properties are imparted to boiling water. Boiling, however, if continued, will cause a loss of the aroma, and increase the bitterness; hence an infusion obtained by steeping is preferable to a decoction, but the water should remain in contact with the coffee long enough to extract the greater portion of its agreeable qualities, which is not the case in the use of the percolating apparatus introduced by Count Rumford, and afterward variously modified. In Asia coffee is used in a thick decoction. Lamartine, in his "Travels in Syria and the East," states that in the ordinary khans copper coffee pots are kept upon the charcoal fires always filled with thick farinaceous coffee, "the habitual refreshment and only want of the Turks and Arabs." In Sumatra the natives make use of the leaf of the plant instead of the seed, ascribing to it more of the bitter and nutritious property. It may also be cultivated for the leaves where the production of seed would fail from unsuitableness of climate or soil. The leaves are moderately roasted and then rubbed to powder in the hands, and this powder is used like tea. The infusion is said to resemble in taste coffee as usually prepared and tea combined.—It is a remarkable fact that the same peculiar principle should exist in three or more vegetable productions, which, though not at all resembling each other in other respects, have been selected as beverages by almost all nations, some adopting one of them and others another. This fact, pointed out by Liebig, as also that this principle furnishes the elements of the bile, is suggestive of a peculiar adaptation of it to the needs of the human system. This principle, called theine in tea and caffeine in coffee, is theobromine in cocoa, and the same is recognized in the *guarana officinalis* and the *ilex Paraguensis*, which have long served the aborigines of South America the purposes of tea. Coffee and tea are both used in temperate regions; but in the colder climes tea appears to be generally preferred, and is frequently exclusively employed. In the West India islands, and throughout all warm countries, coffee is used with no restriction as to quantity, and complaints are rarely made of injurious effects attending its use. In colder regions it is often the case that individuals are compelled to abandon its use from its effect upon the digestive organs, causing acidity of the stomach and nervous affections, as headaches, &c. Cases are frequent of persons subject to headaches being greatly relieved by abandoning the use of coffee.—As a medicine, coffee is recommended in whooping cough, and as a palliative in violent spasmodic diseases attended with palpitation of the heart, rapid pulse, &c., and in hysterical affections; also in chronic diarrhœa and croup. It has also been found temporarily useful in nervous and sick headaches not caused by indigestion. Roasted coffee is a powerful deodorizer, destroying very rapidly the most noxious smells. It is best applied by first drying and crushing the raw beans, and then roasting the powder at a moderate heat to a dark brown color, when it may be sprinkled about or simply exposed on a plate where the effluvium exists. The adulteration of roasted coffee is easily practised by the introduction of various vegetable and other substances, as noticed in the article ADULTERATION. (See also CHICORY.) The presence of chicory or of burnt sugar may be inferred in a suspected sample by cold water in which it is placed becoming quickly of a deep brown color, coffee imparting color to cold water very slowly. The microscope is a sure means of detecting the presence of strange vegetable or animal substances, and inorganic matters like Venetian red may be detected in the ashes of an incinerated sample.—The following table gives a rough estimate of the world's production and consumption of coffee:

PRODUCTION.

Brazil	400,000,000	lbs.
Java	140,000,000	"
Ceylon	40,000,000	"
St. Domingo	40,000,000	"
Cuba and Porto Rico	25,000,000	"
Venezuela	25,000,000	"
Sumatra	20,000,000	"
Costa Rica, British West Indies, Mocha, &c.	15,000,000	"
Total	712,000,000	"

CONSUMPTION.

United States and British Provinces	218,000,000	lbs.
Germany	155,000,000	"
France, Switzerland, Italy, &c.	125,000,000	"
Holland and Belgium	90,000,000	"
Great Britain	35,000,000	"
Scandinavia	30,000,000	"
Russia	15,000,000	"
Other countries	15,000,000	"
Total	712,000,000	"

consumption of coffee in Great Britain has from 1,013,854 lbs. in 1801 to 34,995,954 in 1856. In the 9 months ending Sept. 1858, Great Britain imported 35,217,915 and France 49,000,000 lbs., against 20,880,- lbs. and 48,000,000 lbs. in the correspond- period of 1857. The United States import- the year ending Jan. 30, 1857, 240,676,227 valued at $22,426,758, against only 21,373,- lbs. in 1821, exhibiting in 36 years an an- average increase of 331,676 lbs. The annual increase of consumption within years is estimated at 7½ per cent. in States, at 2½ per cent. in Europe, per cent. for the whole world.

FEE. I. A S. co. of Ala., bordering on watered by Pea river; area about 900 sq. pop. in 1850, 5,940, of whom 557 were The surface is somewhat hilly, and the ly poor. Pine timber grows in great Productions in 1850, 1,408 bales 136,610 bushels of corn, 51,359 of tatoes, and 65,863 lbs. of rice. There churches, and the public schools num- pupils. The county was formed from Dale county. Capital, Wellborn. II. co. of Tenn.; area 220 sq. m.; pop. in 1, of whom 1,267 were slaves. It has ed and hilly surface, and a fertile soil. ons in 1850, 433,215 bushels of corn, wheat, 70,365 of oats, and 44,668 lbs. There were 21 churches in the and 900 pupils attending public schools. nchester.

(Gr. κοφινος, a wicker basket), a box for retaining the remains of the Receptacles of this kind have been in the remotest periods. In the last enesis it is recorded that the body of was embalmed and placed in a coffin in Various materials have been applied construction. The ancient Egyptians costly woods from Syria, as the cedars non, and also employed the cheaper their own country. Stone and earth- were applied to the same purpose. This the outer case, the body being first en- in bandages, and then in a pasteboard inner coffin made to fit the form, and and ornamented with figures and nu- jects; among them was a face in like- deceased, which was often covered gold leaf and richly adorned; the inlaid with brilliant enamel, the hair imitated and adorned with gold. Three board cases succeeded, each as elabo- differently ornamented, and all re- the human figure. The external wooden a flat or low arched top, sometimes short square pillar standing at each cor- It was variously ornamented with painted and a panel was sometimes left open the face of the mummy. The stone usually called sarcophagi, were oblong with straight sides and a curved or point- The figure of the deceased was sometimes carved upon them in relief; some were of the form of a king's name or royal oval, and some, whether of basalt, granite, slate, or limestone, were of the shape of the mummy within. Wilkinson met with one of red earthenware of this form, made in 2 pieces, which were sewed together, holes having been left in the pottery for the purpose. Layard also describes glazed earthenware coffins, great numbers of which he exhumed in southern Mesopotamia. The portion for the head and shoulders was of oval form, about 2 feet wide, and furnished with a flat lid on the top. The part for the feet and legs was narrow, and in the very end was left a small opening. These, too, were ornamented with various devices. Some of the Egyptian sarcophagi were made of the beautiful oriental alabaster, or stalagmitic carbonate of lime. The famous Belzoni sarcophagus, purchased by Sir John Soane for 2,000 guineas for his museum, is a magnificent specimen of this work. The ancient Britons also made use of stone coffins for the bodies of persons belonging to the higher classes; they are still occasionally met with in barrows, together with Roman urns. They were sometimes constructed by placing flat stones on edge, and covering them with other pieces. The bodies of the poorer classes were wrapped in cloth and interred. In the reign of Henry V. and VI. the stone coffins were solid at one end, except a space scooped out to receive the head. Lead and wood were also occasionally employed as materials for coffins by the Saxons. In some countries the coffin serves merely the purpose of holding the body while it is carried to the grave or tomb; and is then made, like the hearse, to perform the same office for others. Such is the practice in Spanish countries at this time. The body removed from the coffin is placed in a receptacle in stone work, which is then closed by masonry. Coffins called burial cases are a modern improvement. They are of thin cast iron, made in the form of the common Egyptian mummy cases, and provided with a lid that can be closed air-tight. They are often covered with black velvet. They are especially useful, as bodies may be kept in them any required length of time before being deposited in their final resting place.

COFFIN, Sir Isaac, an English admiral, born in Boston, Mass., May 16, 1759, died in July, 1839. He was educated at the public schools in that city, and having entered the British navy as midshipman in 1773, under the patronage of Admiral Montagu, served in various ships on the American station, being finally attached to the Romney, flag ship of his patron, off Newfoundland. In 1778 he was appointed lieutenant, and in 1781 commander. On March 16, 1781, he acted as signal-lieutenant to Admiral Arbuthnot in the action off Cape Henry, and in 1782 was present as a volunteer under Admiral Hood in the engagement between Rodney and De Grasse. In 1788, irritated at being deprived of his commission for an informality then common in the service, he went to Flanders and gave his aid to the Brabant patriots. The sentence against him was soon reversed, and he reëntered the British navy with his former rank. Having received an injury which incapacitated him from active duty, in attempting to save the life of a sailor who fell overboard, he was placed in charge of the depot at Leith; thence was sent commissioner to Corsica; thence to Elba; subsequently to Lisbon as head of the naval establishment there; and in 1798, when Minorca fell into the hands of the English, he was appointed superintendent of the arsenal at Port Mahon. In 1804 he was advanced to the rank of rear admiral of the blue; next year was made a baronet; in 1808 vice-admiral, and in 1814 admiral. In 1818 he was elected member of parliament for Ilchester, and retained his seat till the dissolution in 1826. His speeches were chiefly on naval affairs, and distinguished for blunt, sailor-like honesty, with a strong vein of facetiousness. He always retained a warm affection for his native city, and visited it many times. In 1826 he founded a school in Nantucket, still called by his name. He owned considerable possessions in the Magdalen islands.

COFFIN, Richard or Robert S., an American printer and poet, born at Brunswick, Me., in 1797, died at Rowley, Mass., May 7, 1827. He served his apprenticeship as a printer in Newburyport, whither his father had removed, was a sailor during the war of 1812, and at one time a prisoner on board a British frigate, and subsequently worked on newspapers in Boston, New York, and Philadelphia, publishing occasional verses in the poet's corner. He came to be known, perhaps from his own pretentiousness, as the Boston bard, and his poems were collected in a volume entitled the "Oriental Harp, Poems of the Boston Bard."

COG, a tooth, commonly of wood or iron, inserted in the edge or upon the face of a wheel. A cogged wheel is distinguished from a toothed wheel, by cogs being made separately and attached to the wheel, while teeth are cut or cast in the wheel itself.

COGNAC, the capital of a French arrondissement of the same name, department of Charente, 22 m. from Angoulême; pop. of the arrondissement in 1856, 60,104, and of the town 7,085. It enjoys a great celebrity on account of the brandy to which it has given its name. All the brandy of Charente is sold as Cognac, but the genuine article is made in the immediate vicinity of the town; the best second qualities are produced at Blanzac, Jarnac, Rouillac, Aigre, and Ruffec. An ancient castle, in which Francis I. was born, is now used for a brandy warehouse.

COGNATES (Lat. *cognatus*, kindred), in the Roman civil law and in Scotch law, the collateral heirs by the mother's side.

COGNATION, in the civil law, that tie of consanguinity which exists between persons descended from the same father or mother; in distinction from agnition, which includes only the descendants from males.

COGNOMEN, in Roman antiquity, the surname or hereditary family name, as Cicero, Brutus. A second honorary cognomen, as Africanus, bestowed in commemoration of some distinguished deed, was more frequently termed the agnomen.

COGSWELL, Joseph Green, LL.D., an American scholar, organizer and first superintendent of the Astor library in New York city, born in Ipswich, Mass., about 1790. After graduating at Harvard college in 1806, he made a voyage in a mercantile vessel to the East Indies, visiting also the shores of France and Italy. On his return he began to study law with Fisher Ames, and in 1814 was called to Cambridge as tutor. In 1816 he went again to Europe, and joined his friends George Ticknor and Edward Everett in studies at Göttingen and other German universities, and in travelling on the continent. He remained abroad about 4 years, giving special attention to the principles of instruction and education, and already entertained the idea of forming a great library. Returning to Cambridge, he filled the offices of librarian and professor of mineralogy and geology, till in 1823 he united with Mr. George Bancroft in founding the Round Hill school at Northampton. The plan of this institution had been suggested by observation of the best English and German preparatory schools, and during the 5 years that Mr. Cogswell was associate head of it, and about the same period that he conducted it alone, it attracted students from every part of the country, and exerted an important influence in advancing the standard of American education. After leaving Northampton, he had charge of a similar establishment in Raleigh, N. C., but prior to 1839 had settled in New York city, where he became editor of the "New York Review," and was already interested and engaged in the great work of his later years. During the latter part of John Jacob Astor's life, Dr. Cogswell was in daily intercourse with him, living at his request in his house as a friend and companion, and arranging the plans and selecting the titles of the books for the great library which it was his purpose to endow. It was the unnoticed preparatory labors of many years which gave to the Astor library so soon after the realization of its endowments its complete and orderly development. He was appointed by Mr. Astor one of the trustees of the fund, and designated by the trustees as superintendent of the library, before the opening of which he three times visited the principal libraries and book marts of Europe, collecting the books for it. The character of the collection demonstrates his appreciation of the value of all branches of knowledge, and his liberal sympathy with every intellectual pursuit; and to his untiring energy, habits of accuracy, bibliographical learning, and bibliothecal experience, are to be chiefly attributed the effect given to the benevolent designs of the donor. He presented to the Astor library his own bibliographical collection, which was the largest and most valuable in this y. He had previously united with Mr. w Ritchie in purchasing in Germany, and ting to Harvard college, a cabinet of about minerals, and had made to the botanic at Cambridge a donation of nearly 4,000 hoice specimens of dried plants of central e, which, with the assistance of Mr. Se- he had collected in Switzerland.

LL, William, an American clergy- in Atkinson, N. H., June 5, 1789, died ton, April 18, 1850. After graduating uth college in 1811, and studying the- er eminent divines, he was for 14 of the South church in Dedham, 1832 he became secretary of the an education society, of which he had 8 years agent; in 1841 he was elected f history in Dartmouth college, which exchanged in 1844 for that of pres- Gilmanton theological seminary. He author of several works on religion and and edited for some time the "New orical and Genealogical Register," "merican Quarterly Register."

ASSET, a post township of Norfolk co., pop. 1,775, extensivly engaged in the ery. In 1851, it had 561 persons employed in this manner, and in arrels of mackerel were inspected. is the terminus of the South Shore

SION, the force which holds together of both solid and fluid bodies. this force, the various modifica- er which it manifests itself, and the govern its action, have been the f much speculation among mathemati- of experiments with physical philoso- ts most important modification is, per- that produced by heat, which separates les of a body, enlarging its volume, reducing most solids successively orms of liquid and vapor. The cool- vapor causes it to return to a liquid the cooling of the liquid brings it to a en this change into solid form takes wly, the laws of cohesion produce a e structure. A solid is sometimes also into fluid form by the action of another when we dissolve salt in water. The evaporation of this water will cause d again to assume a crystalline solid For the cohesive force of different see Ingraham's "Concise System of ics."

ATION, a term of Portuguese ex- pplied to the process of obtaining vegetable extracts by repeatedly turning he products of the distillation to be re- d with fresh portions of the plant.

IOES, Cahoos, or Cahoes, a flourishing turing village of Albany co., N. Y., on t bank of Mohawk river, a little below tiful falls of the same name, at the of the Erie with the Champlain canal, and on the Troy and Schenectady railroad; pop. in 1855, 6,260. It contains 2 extensive axe factories, a factory of linen thread, and 4 very large cotton mills, employing 1,200 hands. There are also a number of other manufacturing establishments and a newspaper office.

COHORT, in Roman antiquity, a division of an army, comprising 3 maniples or 6 centuries, and being the 10th part of a legion. It contained from 400 to 600 men, according to the number in the legion. There was one cohort (*cohors milliaria*) which had precedence over the others and consisted of 1,000 select men. It marched in the van, carried the eagle, and was commanded by a tribune of approved valor. Marius, who during the wars with the Cimbri introduced tactical reforms into the Roman army, was the first who organized the legion into 10 cohorts. The prætorian cohorts were the special guard successively of the generals, triumvirs, and emperors, and exerted great influence during the decline of the empire. Augustus organized 9 of them, which he retained as a standing army in the vicinity of Rome, under the command of 2 prefects. Tiberius placed them under a single prefect, and gave them a fortified camp within the walls. They were treated as a privileged force, received gratuitous subsidies, and on the death of an emperor were often masters of the empire. They were disbanded and their camp destroyed by Constantine, after his victory over Maxentius.—When Napoleon organized the legion of honor, he divided it into 16 cohorts.

COIMBATORE, or Coimbatoor, a district of British India, in the presidency of Madras, between lat. 10° 14′ and 12° 19′ N., long. 76° 36′ and 78° 16′E.; area, 8,151 sq. m.; pop. 1,153,862. The district is enclosed on the N. by the group of mountains bordering the table-land of Mysore, and on the S. by the Pulnai or Vurragiri mountains, and by the Animali range. The principal rivers are the Cavery, Bhowani, Noyel, and Ambrawutty. Although the climate is rendered insalubrious by several extensive morasses, it is better than that of the maritime parts of the Carnatic. Elephants abound, tusks varying in price from $20 to $50 a pair, according to the size. The vegetable productions consist mainly of dry grains. Among the alimentary crops are gram, various sorts of panic and of millet, turmeric, &c. Superfine tobacco, teak and other valuable timber, are produced, as well as castor oil and cotton; the last 2 articles forming the principal exports. Successful experiments have been made with American cotton and Mauritius sugar, proving the fitness of the soil for their cultivation. The language spoken is the Tamil.—The capital, of the same name, is a well built town, occupying an elevated and dry situation on the banks of the Noyel, on the projected railway from Madras to Beypoor, lat. 11°, long. 77°, 600 m. from Bombay, and 268 m. from Madras; pop. about 17,000. It contains a mosque, built by Tippoo Sultan, who made this place one of his principal military stations. About 2 m. from the town, at Peruru, is a Hindoo temple, called Mail Chittumbra. It is roughly constructed, but covered with a profusion of Hindoo ornaments. Some time ago an ancient tumulus near Coimbatore was opened, and found to contain various weapons and other articles, such as were formerly in use among the Romans. The town was twice taken by the British; once in 1783, and again in 1790. The town possesses an English and native school. The district jail is capable of holding 275 prisoners and a detachment of native infantry. The European quarter is eastward and detached from the town.

COIMBRA, a city of Portugal, capital of the province of Beira and of the district of Coimbra, 120 miles N. N. E. from Lisbon, in lat. 40° 12' N. and long. 8° 26' W.; pop. of the district 245,000, and of the town 18,315. It is situated on the river Mondego, in the midst of a mountainous but fertile and well cultivated tract. Its principal public building is the university, the only one in Portugal, founded at Lisbon in 1291, and transferred hither in 1308. It consists of 18 colleges, is divided into 6 faculties, employs 33 professors in ordinary and 22 assistant professors, has a library of over 30,000 volumes, and is attended by 1,000 to 2,000 students. This university is highly endowed, the courses of study are long, and the annual examinations are said to be severe. Coimbra has also the wealthy Augustinian convent of Santa Cruz, with its immense Gothic structure. There are also a college of arts belonging to the Jesuits, a cathedral, 8 churches, and several monasteries. On a hill near Coimbra is the splendid convent and church of the nuns of Santa Clara, and in the valley of the Mondego opposite to it is the Quinta das Lagrimas, famed in poetry as the scene where the young Ines de Castro was slain while awaiting her princely husband. Seven kings of Portugal were born and 4 died here, and several princes derived their title from the town. Coimbra is said to be the *Conimbriga* of the Romans. It sustained many sieges in mediæval times, but it has been declining since the 15th century.

COINS (Fr. *coin*, a die; Arabic, *kauna*, to strike or stamp), metallic money; specie; pieces of metal, generally gold, silver, or copper, bearing certain marks or devices to indicate their origin and value, and designed to be used as money. How early gold and silver began to be used as money, history does not inform us. Nearly 2,000 years B. C., Abraham returned from Egypt "very rich in cattle, in silver, and in gold;" and in his purchase of the cave of Machpelah, weighed out the consideration agreed upon, "400 shekels of silver, current money with the merchant." The use of the metals, however, in the form of wedges or bars, though an immense improvement upon simple barter, or the use of cattle, grain, and other commodities, was still attended with inconveniences. At every transaction the precise weight of metal must be computed; a hammer and chisel must be at hand to cut it off, and a balance to weigh it. The quality of the metal was also to be ascertained. All these troubles were at length ended by the expedient of shaping the metals into pieces of convenient size, and stamping upon each its exact value. He who first did this was the inventor of coins; but history is silent respecting his name, his country, or the date of his invention. Homer, although he speaks of workers in metals, makes no mention of coined money. Herodotus says that the Lydians, as far as he knew, were the first who struck money; and although the oldest specimens of coin now extant have usually been supposed to be Grecian, there are reasons for thinking with Herodotus that the invention was Asiatic. Coins were probably used as early as the 8th century B. C., and by the 4th century money was found throughout the civilized world, every state having its proper coinage.—Most of the commoner metals have in turn been used for making coins. The early coins of Asia Minor were of electrum, a mixture of gold and silver, in the proportion of 3 of the former to 1 of the latter. Lycurgus banished gold and silver, and made the money of Sparta of iron, $100 worth of which required a cart and 2 oxen to remove it. Copper formed the early money of the Romans; and when Cæsar landed in Britain, coins of brass and iron were found in use. Tin was coined by Charles II., and James II. even resorted to gun metal and pewter. At the present day, however, the precious metals, gold and silver, with copper for the lowest denomination, are almost universally employed as the material of coins. Coins of platinum are struck in Russia, but its use for this purpose has not extended to other nations. Gold and silver in a state of purity are soft and ductile; and coins made of these metals would suffer loss and injury to a certain degree by abrasion, if there were no means of hardening them. The addition of a small quantity of alloy is found to produce this effect, without impairing materially the ductility or beauty of the metals. Although in a few countries coins are issued of almost absolute purity, such as the gold sequins of Tuscany and the silver florins of Hanover, yet for the most part the coins of the world consist not of pure gold and silver, but of these metals alloyed with some other, generally copper, in definite proportions fixed by law. The difficulty of ridding gold entirely of the silver with which it is always found combined in nature, has led in some countries to the practice of leaving enough silver to serve for alloy. This is the case in Spanish America, as is indicated by the paleness of their doubloons. In some European countries the silver is entirely removed, and copper introduced for alloy, giving to the coins a reddish cast. In the United States the practice of the mint is to imitate the true color of gold in the coinage, by using an alloy of about $\frac{9}{10}$ copper and $\frac{1}{10}$ silver; that is, in 1,000 ounces of standard gold there are 900 oz. pure gold, silver 10 oz., and copper 90 oz.—The term standard, as applied to coins, means strictly the

tions of fineness and weight to which they
uired by law to conform. Thus, in the
States, the gold coins must be made of
consisting of $\frac{900}{1000}$ pure gold, and $\frac{100}{1000}$ al-
n other words, they must be $\frac{9}{10}$ fine. This
standard fineness, and gold of this quality
ed standard gold. The weight of such
re ed by law in each gold coin is its
weight. Thus in the eagle there must
grains. In estimating the value of coins,
quantity of fine metal contained in them
is considered; the alloy goes for noth-
The practice of the world is not uniform
to standard fineness of coins; some
issuing coins of as low fineness as
housandths, and others aiming at absolute
. Great Britain still retains the old pro-
of $\frac{1}{12}$ alloy; while in the United States,
Spain, Belgium, Rome, and some of the
states, the decimal proportion of $\frac{1}{10}$ al-
been adopted. Different modes of ex-
the fineness of coins and bullion prevail
nt countries. Where the decimal sys-
notation is employed, it is expressed
usandths. Thus the standard fineness
would be written $\frac{900}{1000}$, or simply .900;
ion containing ¾ pure metal would be
e .750 fine. In Great Britain two sys-
revail, one for gold, and one for silver.
ineness of gold is expressed in carats, ab-
ity being 24 carats fine. The stand-
ess of British gold coins is 22 carats,
quivalent to $\frac{11}{12}$, or 916⅔ thousandths.
purpose of expressing minute degrees
ess in bullion, the carat is divided into 4
ains, and these again into quarters. At
h mint, assays are carried to the ⅛
er, or the $\frac{1}{32}$ part of the carat. In this
n the United States standard of $\frac{900}{1000}$
be expressed $21\frac{19}{32}$ carats. The fineness
is estimated by stating the number of
of fine silver in a pound troy of the me-
Thus pure silver is 12 fine; and English
r coins are $11\frac{1}{10}$ fine, because in a pound
of standard silver the law requires $11\frac{1}{10}$ oz.
ver and $\frac{9}{10}$ of an oz. alloy. Thus it will
that while the British standard for gold
is 916⅔ thousandths, that of silver coin is
thousandths.—Coins are generally made
cir r, and thin. By being flattened they
e er impressions, and are convenient-
and piled. The circular form sim-
process of fabrication, diminishes the
n to which the coins are subjected in
n, and fits them for being carried in
pocket. Though the circular form was
at in ancient coinage, it was not till the
8th century that a true circle was attain-
This is effected by striking the coin in a
or collar. The exceptions to the circular
are not numerous. We have, however,
square ducat of Nuremberg, the square
es of the Mogul empire, the parallelograms
n, the octagonal pieces of Assam, and
r home, the $50 octagons of Cali-
The thickness of coins is generally proportioned to their diameter, though in this particular there is great variety. The size of coins is also exceedingly variable. In the United States, silver coins range from the 3 cent piece to the dollar, or from 11½ grains to 412½ in weight, and from about ½ inch to 1½ inches diameter. Gold coins range from the dollar of $25\frac{8}{10}$ grains to the double eagle of 516 grains. The new cent coin (copper and nickel) is about ¾ of an inch in diameter, and weighs 72 grains.—The impressions upon coins present an endless variety. In monarchical countries the obverse of the coin usually bears a likeness of the reigning sovereign, and from this circumstance that side of the coin is, in common parlance, called the head. In republics it is usual to substitute some device emblematic of liberty. This is often a female figure, or head, with a *pileus*, or Roman liberty cap. The date is also placed upon the obverse in coins of the United States. The reverse of a coin commonly exhibits in the centre the national shield, or the denomination of the piece surrounded by a wreath. Running round the coin near the border, there is usually inscribed the name of the country in which it was struck. It is customary also, in countries having more than one mint, to distinguish the coinage of each by a letter or monogram. The several branches of the mint of the United States, at Charlotte, Dahlonega, New Orleans, and San Francisco, employ for this purpose the initials C., D., O., and S., respectively. Coins having no mark are from the mint at Philadelphia.—In the United States, the power to coin money is vested by the constitution in congress, and is prohibited to the separate states; and yet individual citizens are left perfectly free to coin money, provided only that the coins thus made be not "in resemblance or similitude" of the gold or silver coins issued from the mint. In the case of copper coins, however, in addition to the penalties of counterfeiting, the offering or receiving any other copper coin than the cent and half cent is prohibited by fine and forfeiture. Very large amounts of private gold coins have been struck and extensively circulated in different parts of the country. Such are the coins issued by Reid of Georgia, the Bechtlers of North Carolina, the Mormons in Utah, and some 15 or more private mints in California.—The earliest coinage for America is said to have been made in 1612 for the Virginia company, at the Somers islands, now called Bermudas. The coin was of brass, with the legend "Sommer Island," and "a hogge on one side, in memory of the abundance of hogges which were found on their first landing." On the reverse was a ship under sail, firing a gun. As early as 1645 the assembly of Virginia, "having maturely weighed and considered how advantageous a quoine current would be to this collony, and the great wants and miseries which do daily happen unto it by the sole dependency upon tobacco," provided by law for the coinage of copper pieces of 2*d.*, 3*d.*, 6*d.* and 9*d.*; but this law was never carried into effect. The

earliest colonial coinage was in Massachusetts, in pursuance of an order of the general court, passed May 27, 1652, which established "a mint howse" at Boston. The order required the coinage of "12 pence, 6 pence, and 3 pence pieces, which shall be for forme flatt, and stamped on the one side with N. E., and on the other side with XII*d*., VI*d*., and III*d*., according to the value of each peece." These coins were to be of the fineness of "new sterling English money," and every shilling was "to weigh 3 penny troy weight, and lesser peeces proportionably." They were soon after in circulation; but owing to the excessive plainness of their finish, they were found to be greatly exposed to "washing and clipping." To remedy this, the general court, on Oct. 19 of the same year, ordered a new die, and required that "henceforth both shillings and smaller peeces shall have a double ring on either side, with this inscription, (Massachusetts), and a tree in the centre, on the one side, and New England and the date of the year on the other side." In 1662, a 2 penny piece was added to the series. These coins are now known as the "pine tree shillings," &c. The Massachusetts mint existed about 34 years; but all the coins issued bear only the dates 1652 and 1662, the same dies having probably done service throughout the period. In the reign of William and Mary, copper coins were struck in England, for New England and Carolina, having on the obverse an elephant, and on the reverse respectively, "God preserve New England, 1694," and "God preserve Carolina and the lords proprietors, 1694." As early as 1662, an act was passed by the provincial assembly of Maryland "for the setting up of a mint within the province." It is probable, however, that the mint was never established; but shillings, sixpences, and fourpences of silver were made in England under the direction of Lord Baltimore, and sent to the colony, having on the obverse a profile bust of Lord Baltimore, with the legend, *Cæcilius, Dns: Terræ : Mariæ :* &c.; reverse, an escutcheon with family arms, value of the piece, and the legend, *Crescite : et : Multiplicamini.* There were also copper halfpennies with the same obverse, and having on the reverse the legend, *Denarium : Terræ-Mariæ*, and in the centre 2 flags on a ducal coronet. New Hampshire legislated for a copper coinage in 1766; but, as in the case of Virginia and Maryland, nothing more was done. In the reign of George I., an attempt was made to introduce into general circulation in the colonies coins made of Bath metal or pinchbeck, having on the obverse the head of George I. and the legend, *Georgius D. G. Mag. Bri. et Hib. Rex;* and on the reverse a large double rose with the legend, *Rosa Americana, Utile Dulci*, 1722 and 1723, in the last the rose being crowned. These coins were made by William Wood, under a royal patent "for coining small money for the English plantations, in pursuance of which he had the conscience to make 18 shillings out of a pound of brass." This "Wood's money," however, was vehemently rejected both here and in Ireland, where strenuous efforts were made to introduce it. From 1778 to 1787 the power of coinage was exercised not only by the confederation in congress, but also by several of the individual states. In Vermont a mint was established by legislative authority in 1785, in the town of Rupert, and copper cents were issued of the following description: Obverse, a sun rising from behind hills, and plough in the foreground—legend, *Vermontensium Res Publica*, 1786; reverse, a radiated eye surrounded by 13 stars—legend, *Quarta Decima Stella.* The cents of 1788 have on the obverse a head, with the legend, *Auctoritate Vermontensium;* and on the reverse a woman with the letters *Inde. Et Lib.* A few half cents were also coined at the Vermont mint. Connecticut followed the example of Vermont, and in the same year, 1785, authorized the establishment of a mint at New Haven, and copper coins were issued, weighing 6 pennyweights, and having on the obverse a head with the words *Auctori. Connec:* reverse, a female figure holding an olive branch, with the legend, *Inde. Et Lib.* 1785. This mint continued in operation 3 years. New Jersey authorized a copper coinage in 1786. The parties procuring the patent established two mints, one at a place known as Solitude, about two miles west of Morristown, and the other at Elizabeth. The coins are thus described: obverse, a horse's head with a plough beneath—legend, *Nova Cæsarea*, 1786, &c.; reverse, a shield—legend, *E Pluribus Unum.* Massachusetts, by act of Oct. 17, 1786, directed the establishment of a mint, and the following year the necessary works were erected on Boston Neck and at Dedham. In 1788, cents and half cents were issued, exhibiting on the obverse the American eagle with arrows in the right talon and an olive branch in the left, a shield on its breast bearing the word "Cent"—legend, "Massachusetts, 1788;" reverse, an Indian holding a bow and arrow—legend, "Commonwealth" and a star.—As early as January, 1782, a plan for an American coinage was submitted to congress by Robert Morris, the head of the finance department, the authorship of which is, however, claimed for Gouverneur Morris. In Feb. following, congress approved the establishment of a mint, but no further action was taken till 1785, when congress adopted the plan of a national coinage presented by Thomas Jefferson, and in 1786 decided upon the following names and characters of the coins: An eagle, to contain $246\frac{268}{1000}$ grs. of fine gold, value $10, and half eagle in proportion, both to be stamped with the American eagle; a dollar, to contain $375\frac{64}{100}$ grs. of fine silver; a half dollar, double dime, and dime, in proportion. The copper coins were a cent and half cent. In Oct. 1786, congress framed an ordinance for the establishment of a mint; but nothing further was done until 1787, when the board of treasury, by authority of congress, contracted with Mr. James Jarvis for 300 tons of copper

he federal standard. These cents were
t the New Haven mint, and are of the
r description: On one side, 13 circles
er, a small circle in the middle with
United States" around it, and in
the words, "We are one;" on the
e, a sun-dial with the sun above it, and
787, on opposite sides, and below the
nd Your Business." A few of these
l to have been struck at the Ver-
Rupert. On April 2, 1792, a code
enacted for the establishment and
f the mint, under which, with slight
the coinage was executed for 42
denominations of coin and their
follows: Gold, the eagle of $10, to
70 grains; the half eagle and quarter
proportion; all of the fineness of 22
r 916⅔ thousandths. Silver, the dollar
to weigh 416 grains; the half dollar,
lar, dime of 10 cents, and half dime,
rtion: the fineness to be 1,485 parts fine
or .4 thousandths. Copper, the cent
the half cent in proportion. The
declared the dollar to be the unit of
ney, and directed that all public ac-
be kept in conformity to the de-
of coins above described. Since
92, the following changes in the
have occurred: Jan. 14, 1793, the cent
to 208 grs., and half cent in proportion.
1796, cent reduced to 168 grs., and half
proportion. June 28, 1834, the weight
was reduced to 258 grs., and the
oportion, of which 232 grs. were to
gold, equal to a fineness of 899$\frac{225}{1000}$
ths, being an increase of 6$\frac{68}{100}$ per cent.
rmer value of gold as compared with
hich remained unchanged.—The disad-
of the complex standards, both of gold
determined the director of the mint
Dr. R. M. Patterson) to attempt an
nt. He accordingly drew up a well
code of mint laws, which was enact-
ongress, Jan. 18, 1837, by which the
lard of fineness of $\frac{900}{1000}$, for both
silver, was adopted. The weight of
coins remained unchanged, but the dol-
reduced to 412½ grs., and the lesser sil-
in proportion. By the act of March
there were added to the series of gold
double eagle and the dollar; and by
eb. 21, 1853, the 3 dollar piece. By
rch 3, 1851, there was added to the
a 3 cent piece, of the fineness of
12⅜ grs. in weight, at which rates it
d to be coined till April 1, 1853, when
ss was raised to .900, and its weight re-
"$\frac{3}{50}$ of the half dollar," or 11$\frac{52}{100}$ grs.
late also, in pursuance of the act of Feb.
, an important change was effected in
r coinage. The preëxisting laws had
th gold and silver coins a legal tender
amount. At the ratio of silver to gold
1, silver was undervalued in the United
compared with Europe, and our silver coins were being exported. The remedy provided was a seiguorage upon the silver coins, and making gold alone the legal tender. The weight of the half dollar was reduced from 206¼ grs. to 192 grs., and the smaller coins in proportion. The mint ceased coining silver for individuals, but purchased silver at the market price and made the coins for government account—a policy with respect to silver which was adopted in England as early as 1817. The effect of this change has been to give to the silver coin of the country a current value sufficiently above its market price as bullion to prevent its exportation, and at the same time to make silver money subsidiary to gold. It is a legal tender now only to the extent of $5; and though it circulates freely in limited amounts, gold has become the currency of the country. The price at which the mint buys silver is fixed from time to time according to its value in the market. For more than a year past the price has been $1 22½ per oz. standard (.900 fine); but in Nov. 1858, it was reduced to $1 21 per oz. standard, payment being made in silver coins except dollars. From 1 oz. of standard silver, costing $1 21, the mint makes $1 25 in coins, *i. e.* half dollars and less; thus establishing a seignorage of 3$\frac{3}{10}$ per cent., which, so far as it exceeds the cost of coinage, is a profit to the government. The silver dollar was not included in this change. Its weight still continues at 412½ grs., while that of 2 half dollars, or an equivalent sum in smaller coins, is 384 grs. It is therefore intrinsically worth 7$\frac{42}{100}$ per cent. more than a dollar's worth of the other silver coins; but as compared with their current value, only about 4½ per cent. more. It always commands its proportional premium in the market, but does not enter into the circulation of the country; and it is not easy to see any good reason for leaving it out in the change above described. The only further change in the currency to be noticed is that effected by the act of Feb. 21, 1857, by which the copper cent and half cent are discontinued, and a new cent, composed of 88 per cent. of copper and 12 per cent. of nickel, and weighing 72 grs., is substituted. —The subjoined tables exhibit the comparative value of the coins of different countries and ages. The tables of ancient coins are those of Dr. Arbuthnot, whose authority, however, has been called in question.

JEWISH COINS.

Names and proportions.					Value in English money.			Value in U. S. money.	
					£	s.	d.	$	cts.
Gerah					0	0	$1\frac{39}{100}$	0	02.766
10	Bekah				0	1	$1\frac{11}{16}$	0	27.66
20	2	Shekel			0	2	$3\frac{3}{8}$	0	55.32
1000	100	50	Maneh, Mina Hebraica.		5	14	$0\frac{3}{4}$	27	66
60000	6000	3000	60	Talent	342	3	9	1,659	60.9
Solidus aureus, or sextula, worth					0	12	$0\frac{1}{2}$	2	92
Siclus aureus, worth					1	16	6	8	85¹
A talent of gold, worth					5,475	0	0	26,553	75

GRECIAN COINS.

Names and proportions.											Value in English money.			Value in U. S. money.	
											s.	d.	qrs.	$	cts.
Lepton											0	0	$^{31}/_{336}$	0	[illegible]
7										Chalcus	0	0	$^{31}/_{48}$	0	[illegible]
14	2									Dichalcus	0	0	$1^{7}/_{24}$	0	[illegible]
28	4	2								Hemiobolum	0	0	$2^{7}/_{12}$	0	[illegible]
56	8	4	2							Obolus	0	1	$1^{1}/_{6}$	0	[illegible]
112	16	8	4	2						Diobolum	0	2	$2^{1}/_{3}$	0	[illegible]
224	32	16	8	4	2					Tetrobolum	0	5	$0^{2}/_{3}$	0	[illegible]
336	48	24	12	6	3	1½				Drachma	0	7	3	0	[illegible]
672	96	48	24	12	6	3	2			Didrachma	1	3	2	0	[illegible]
1344	192	96	48	24	12	6	4	2		Tetradrachma	2	7	0	0	[illegible]
1680	240	120	60	30	15	7½	5	2½	1¼	Pentadrachma	3	2	3	0	[illegible]

Of these, the drachma, didrachma, &c., were of silver, the rest for the most part of brass. The drachma is here, with most authors, supposed equal to the denarius; though there is reason to believe that the drachma was somewhat heavier.

	£	s.	d.	$	cts.
The Grecian gold coin was the stater aureus, weighing 2 Attic drachmas, or half of the stater argentus, and exchanging usually for 25 Attic drachmas of silver.......	0	16	1¾	3	91.5
But according to our proportion of gold to silver, it was worth	1	0	9	5	03
There were likewise the stater Cyzicenus, exchanging for 28 Attic drachmas, or	0	18	1	4	38.5
The stater Philippicus and stater Alexandrinus were of the same value.					
The stater Daricus, according to Josephus, was worth 50 Attic drachmas............	1	12	3½	7	83
The stater Crœsius was of the same value.					

ROMAN COINS.

Names and proportions.						Value in English money.			Value in U. S. money.	
						s.	d.	qrs.	$	cts.
Teruncius						0	0	$0^{775}/_{1000}$	0	00.3915
2					Sembella	0	0	$1^{55}/_{100}$	0	00.783
4	2				Libella As	0	0	$3^{1}/_{10}$	0	01.566
10	5	2½			Sestertius	0	1	$3^{3}/_{4}$	0	03.91
20	10	5	2		Quinarius, or Victoriatus	0	3	$3^{1}/_{2}$	0	07.83
40	20	10	4	2	Denarius	0	7	3	0	15.66

	£	s.	d.	$	cts.
The Roman gold coin, or aureus, weighed generally double the denarius; its value, according to the proportion of gold to silver mentioned by Pliny, was..................	1	4	3¾	5	89.6
According to the proportion that now obtains among us................................	1	0	9	5	03
According to the decuple proportion mentioned by Livy and Julius Pollux.........	0	12	11	3	13.2
According to the proportion mentioned by Tacitus, by which the aureus exchanged for 25 denarii, its value was...............	0	16	1¾	3	91.5

An English writer says of these tables of ancient coins, that they "are constructed on the hypothesis that the consular denarii weighed by Greaves were of the same purity as English standard silver, and that no subsequent diminution was made either in their weight or fineness. The conclusions derived from such data, though differing in degree, are of the same character as those which we should arrive at, if, in estimating the value of the pound sterling during the last 100 years, we took for granted that it contained a pound weight of standard silver, as in the period from the conquest to the reign of Edward I."

TABLE OF GOLD AND SILVER COINS OF DIFFERENT COUNTRIES,

Compiled from the "Manual of Coins and Bullion, by Eckfeldt and Du Bois, Assayers of the Mint of the United States."—N. B. The gold values are computed according to the value of U. S. coins ($18 60.4 per oz. standard); the silver values according to the present (Dec. [illegible]) [illegible] price for silver ($1 21 per oz. standard).

Denomination.	Date.	Weight, grains.	Fineness, thous.	Value.
Argentine Republic.				$ cts.
G. Doubloon of La Plata.	1828–'32	415.0	[illegible]	[illegible]
S. Dollar of Arg. Rep....	1838–'39	412.0	915	[illegible]
Austria.				
G. Ducat	1833	53.7	[illegible]	[illegible]
Ducat Kremnitz (Hungary)	1839	53.7	[illegible]	[illegible]
Sovereign...............	1839	[illegible]	[illegible]	[illegible]
S. Rix dollar	1840	[illegible]	[illegible]	[illegible]
Scudo (Lombardy)....	1839	[illegible]	[illegible]	[illegible]
Florin	1840	[illegible]	[illegible]	[illegible]
Twenty kreutzers.....	1840	[illegible]	[illegible]	[illegible]
Lira (Lombardy)......	1839	[illegible]	[illegible]	[illegible]
Baden.				
G. Five gulden...........	1819–'28	[illegible]	[illegible]	[illegible]
S. Crown	1831–'34	[illegible]	[illegible]	[illegible]
Gulden or florin.......	1837–'39	[illegible]	[illegible]	[illegible]
Bavaria.				
G. Ducat..................	1832	[illegible]	[illegible]	[illegible]
S. Crown	1826–'32	[illegible]	[illegible]	[illegible]
Florin	1839	[illegible]	[illegible]	[illegible]
Belgium.				
G. Twenty francs.........	1835	[illegible]	[illegible]	[illegible]
S. Five francs............	1833–'35	[illegible]	[illegible]	[illegible]
Franc..................	1835	[illegible]	[illegible]	[illegible]
Bolivia.				
G. Doubloon	1827–'36	416.5	870	[illegible]
S. Dollar.................	1827–'37	416.5	[illegible]	[illegible]
Half dollar	1830	[illegible]	[illegible]	[illegible]
Brazil.				
G. 6,400 reis (½ joe)........	1833–'35	[illegible]	915	[illegible]
S. 1,200 reis..............	1837	414.0	[illegible]	[illegible]
400 reis..............	1837	[illegible]	[illegible]	[illegible]
Bremen.				
S. 36 grote...............	1840	134.5	[illegible]	[illegible]
Britain.				
G. Guinea	1818	[illegible]	[illegible]	[illegible]
Sovereign..............	1838–'39	[illegible]	[illegible]	[illegible]
S. Half crown	1836	216.0	[illegible]	[illegible]
Shilling................	1835–'40	87.0	[illegible]	[illegible]
Brunswick.				
G. Ten thaler.............	1831–'35	[illegible]	[illegible]	[illegible]
S. Thaler	1835	[illegible]	[illegible]	[illegible]
Chili.				
G. Doubloon	1835	417.0	[illegible]	[illegible]
S. Dollar.................	1817–'39	414.0	[illegible]	[illegible]
Colombia. { Venezuela. New Granada. Ecuador.				
G. Doubloon (Popayan) ..	1833–'36	416.5	[illegible]	[illegible]
do. (Bogota)	1837	[illegible]	[illegible]	[illegible]
½ do. (Quito).....	[illegible]	[illegible]	[illegible]	[illegible]

OF GOLD AND SILVER COINS.—*Continued.*

nation.	Date.	W'ght, grains.	Fineness 1000ths.	Value.
				$ cts. m.
lombia).....	1819-'21	868.0	780	74 2
gota mint)..	1835-'36	417.0	910	1 06 2
'or..........	1818-'39	102.0	895	3 93 2
daler........	1818-'39	222.5	877	54 7
er...........	1837-'39	445.0	877	1 09 8
e Colombia.)				
100 piastres).	1839	132.2	874	4 97 6
iastres)......	1839	480.0	886	1 00 6
rancs	1840-'41	99.5	900	3 85 7
s............	1831-'38	385.0	899	96 9
....	....	76.5	900	19 2
the Main).				
....	1838	164.0	900	41 2
rachmas.....	1833	89.0	900	3 45 0
....	1832-'33	68.5	902	17 2
nerara).				
....	1832	119.5	819	18 6
....	1825	53.5	980	2 25 7
rent.........	....	141.5	750	29 6
....	1822-'30	204.7	890	7 84 6
....	1839	205.0	895	7 90 2
....	1839	204.0	996	56 8
....	1838	259.0	996	72 2
r............	1815-'17	101.5	894	3 90 8
....	1832-'37	341.5	748	71 5
tadt.				
....	1838-'39	164.0	900	41 8
r............	1839	574.0	900	1 44 6
. I. co.)......	1835	180.0	917	7 10 9
....	1824	180.0	917	46 2
r............	1831	204.5	896	7 89 1
....	1839-'40	203.5	938	56 2
(average)...	....	416.5	866	15 58 4
),average...	1822-'41	416.8	902	1 05 2
), do. ...	1834-'41	418.6	896	1 03 3
), do. ...	1838-'41	415.6	898	1 04 5
), do. ...	1832-'40	416.4	879	1 02 5
'ge of mints)	1824-'41	415.7	897	1 04 4
....	1805-'14	199.0	899	7 70 5
....	1833	174.5	901	6 77 1
....	1839	401.5	902	1 01 5
....	1839	67.0	900	16 8
ncats).......	1818	58.0	995	2 48 5
....	1831-'38	425.0	830	98 8
me as Bava-				
....	1833-'39	53.7	981	2 26 9
ers..........	1816-'39	103.5	899	4 00 7
lders........	1816-'38	493.0	896	1 20 2
....	1816-'38	166.0	896	40 1
a. (See Co-				
....	....	....	....	1 09 2
....	1839	53.7	965	2 28 8
an..........	1839	83.0	963	22 3
(Lima).....	1826-'33	416.5	867	15 55 1
(Cuzco)	1837	416.5	866	15 58 4
ma).........	1841	415.0	899	1 04 5
uzco)........	1835	208.0	650	37 8
....	1822-'24	221.0	909	8 65 2
....	1838	148.0	912	5 81 8
....	1833	226.0	908	57 5
00 reis).....	1838	456.0	912	1 16 5
ederic d'or..	1831	205.0	903	7 97 2
....	1823-'31	343.0	750	72 0
....	1833	267.5	900	10 36 8
....	1835	415.0	900	1 04 6

TABLE OF GOLD AND SILVER COINS.—*Continued.*

Denomination.	Date.	W'ght, grains.	Fineness 1000ths.	Value.
Russia.				$ cts. m.
G. H'f imperial (5 rubles)	1839	100.5	917	3 96 9
S. Rubles	1837-'38	320.0	875	75 4
Ten zloty............	1835	486.0	871	1 18 5
Thirty copecks........	1838	94.0	872	23 0
Sardinia.				
G. Twenty lire...........	1831-'36	99.5	898	3 84 8
S. Five lire.............	1831-'36	385.0	902	97 2
Saxony.				
G. Double August d'or....	1837	205.0	900	7 94 6
Ducat................	1830	53.7	979	2 26 4
S. Thaler	1839	344.0	750	72 2
Species-thaler	1828-'36	432.0	834	1 00 8
Spain.				
G. Pistole (¼ doubloon)...	1818-'22	104.0	872	3 90 4
S. Dollar................	1808-'21	414.0	900	1 04 6
Pistareen	1835-'37	90.5	810	20 5
Sweden.				
G. Ducat	1838	54.0	975	2 26 7
S. Species-daler..........	1830-'38	525.0	751	1 10 4
Switzerland.				
G. Pistole................	1800	116.0	897	4 48 1
S. Ten batzen............	1823	112.0	900	23 2
Tripoli.				
S. Ghersh (100 paras).....	1832	158.0	244	10 4
Utchlik (120 paras)....	1835	227.0	245	15 6
Tunis.				
S. Piastre	1838-'39	176.0	268	18 3
Turkey.				
G. Yirmilik (20 piastres)..	1840	24.5	839	87 7
S. Ghersh or piastre......	1831-'33	44.0	220	02 7
Tuscany.				
G. Ruspone	1824-'34	161.0	999	6 92 5
Sequin................	1824-'34	53.5	999	2 30 1
S. Leopoldone	1830-'34	422.0	925	1 09 3
Florin	1826-'28	105.5	925	27 3
United States.				
G. Double eagle.....since	1849	516.0	900	20 00 0
Eagle ....before	1834	270.0	916⅔	10 65 8
do. ....since	1834	258.0	900	10 00 0
S. Dollar	1853	412.5	900	1 04 0
Half dollar ....since	1853	192.0	900	50 0
Würtemberg.				
G. Ducat	1818	58.0	980	2 23 6
S. Crown.................	1818-'33	454.0	875	1 11 2
Gulden	1824	195.0	750	41 0

—The following table, compiled from the last report of the Hon. J. R. Snowden, director of the mint, exhibits the aggregate coinage of the United States from the establishment of the mint in 1793 to June 30, 1858:

Period.	Gold coinage.	Silver coinage.	Copper coinage.	Entire coinage.
1793 to 1817.	$5,610,957 50	$8,268,295 75	$319,340 28	$14,198,593 53
1818 to 1837.	17,639,382 50	40,566,897 15	476,574 30	58,682,853 95
1838 to 1847.	49,554,452 50	22,331,719 00	349,676 63	72,235,848 13
1848....	2,775,512 50	2,040,050 00	64,157 99	5,879,720 49
1849....	9,007,761 50	2,114,950 00	41,984 32	11,164,695 82
1850....	31,981,738 50	1,866,100 00	44,467 50	33,892,306 00
1851....	62,614,492 50	774,397 00	99,635 43	63,488,524 93
1852....	56,846,187 50	999,410 00	50,630 94	57,896,228 44
1853....	55,213,906 94	9,077,571 00	67,059 78	64,358,537 72
1854....	52,094,615 47	8,619,270 00	42,638 35	60,756,523 82
1855....	52,795,457 20	3,501,245 00	16,030 79	56,312,732 99
1856....	59,343,365 35	5,196,670 17	27,106 78	64,567,142 30
1857, 6 mos..	25,183,138 68	1,601,644 46	63,510 46	26,848,293 60
1857-'8...	52,889,800 29	8,233,287 77	234,000 00	61,357,088 06
Total...	$534,550,768 93	$115,191,507 30	$1,896,813 55	$651,639,089 78

For a description of the process of coinage, see the article MINT. For further information on ancient coins, see NUMISMATICS.

COIR, a kind of yarn made from the fibrous husks of cocoanuts, and formed into ropes, coarse sails, and mats. About 2,500,000 lbs. are annually exported from Ceylon, and the mats are largely manufactured in the English prisons.

COIT, JONATHAN, a benevolent citizen of New London, Conn., died there in Dec. 1855. He bequeathed $30,000 to 3 churches in New London, to be equally divided among them, for the support of their ministers; $10,000 to the poor in the alms-house, and $2,500 to the seamen's friend society.

COJUTEPEC, or COJUTEPEQUE, a town of San Salvador, Central America, 15 m. S. of the city and capital of San Salvador; pop. 15,000. The latter having been destroyed by an earthquake, April 16, 1854, the seat of government was transferred to Cojutepec, and remained there until June 28, 1858, when it returned to San Salvador, that city having meantime been rebuilt.

COKAINE, SIR ASTON, an English poet, born at Elvaston, in Derbyshire, in 1608, died at Derby in 1684. He was educated at both universities, and in 1632 set out on a tour through France and Italy, of which he gave some account in a poem addressed to his son. Being a Roman Catholic and a royalist, he suffered both for his loyalty and his faith during the civil war. He published plays and other poems, which are now rare and valuable only as curiosities. He was intimate with Donne, Suckling, Randolph, Drayton, Massinger, and Sandys.

COKE, the solid product left behind, when the volatile matters are expelled by distillation from bituminous coal. It is obtained from the retorts of gas works after the gases have been separated; and it is made upon a large scale at mines of bituminous coal, for the purpose in part of saving the fine refuse coal by converting it into a valuable fuel, and in part of converting the lump coal into a form better adapted for metallurgic operations and for the use of locomotives, to which the swelling of bituminous coal, its flame and smoke, might be prejudicial. Until recently, it has been the opinion of some engineers that the calorific qualities of bituminous coal exist undiminished in the coke, notwithstanding that the gases obtained in the process of making the coke possess also a considerable heating power. Mr. Josiah Parker states, in vol. ii. of the "Transactions of the Institution of Civil Engineers," that he has "found that 75 pounds of coke, produced from 100 pounds of coal, evaporated as much water as 100 pounds of the self-same coal." He also cites the experience of Mr. Apsley Pellatt in his glass furnaces, which were especially well adapted for showing the relative calorific value of coke and coal, provision being made in them for the full combustion of the volatile products of the coal. Still common gas coke was found to exceed the coal in heating power by 25 per cent. The experience of M. de Pambour was similar to that of Mr. Pellatt. He found that one pound of coke would evaporate 7.12 pounds of water already raised to the temperature of 212°. Mr. Wood, in his treatise on railroads, states that he evaporated from one pound of coal only 5.12 pounds of water under the same circumstances. Such opinions being entertained of its calorific qualities, and the fuel moreover being more agreeable by reason of its freedom from smoke, it came to be generally introduced upon the railways of England and the continent, and has been used to the exclusion of other fuel. But in the work of Messrs. Zerah Colburn and A. L. Holley, entitled "Permanent Way and Coal-Burning Locomotive Boilers of European Railways" (New York, 1858), it is stated that in England, France, and Belgium, this use of coke is diminishing, and raw bituminous coal is taking its place. The authors cite numerous experiments made upon English railways, the results of which have led to this change.—The high estimation in which it has been held, and its unquestioned better adaptation to many metallurgic operations by reason of its more concentrated form, have caused especial attention to be directed in Europe to the best methods of preparing it. In France it is estimated that its cost to the railroads is from ⅓ to ¼ of all the running expenses, and hence great pains are taken to procure it of the best quality; some of the roads even preferring to obtain it from England, rather than use the cheaper but inferior qualities made from the coals of France and Belgium. The cause of the superiority of the English coke is attributed to the coal beds of England containing but few seams of slate interstratified with the coal; so that this is obtained clear of the impurities which in the French and Belgian coals add largely to the proportion of ash, and render it necessary to subject the coal to processes of washing and sorting before coking. Two methods of coking are in use: one in ovens constructed for the purpose, and the other in large open heaps upon the ground. The ovens are built of fire brick or stone, of various sizes, and frequently arranged several together in one stack, in which case dimensions of 12 feet square and 10 feet high are found most convenient. They are arched over at the top, a hole being left for the exit of the gases, and another for the introduction of the coal, closed by an iron door in front. About two tons of coal are introduced through the latter, filling the oven to the springing of the arch, and leaving room above for the coal to swell. The charge is ignited by the heat left in the walls by the process just previously completed. Air is allowed to enter in proper quantity at the lower door, and the gases escape at the top. In 24 hours the air holes below are closed, and for 12 hours more the gases pass out at the top. The upper hole is then closed with a slab of stone or iron and covered with sand, and left for 12 hours more to partially cool down the charge. After this the door below is opened, the coke taken out quickly, quenched with water, and carried off in iron wheelbarrows. Where it is an object to save the coal tar, the ovens are provided with a flue at the top, through which the volatile products are conducted into a receptacle in which the liquid matters are condensed. The product of bituminous coal in coke, gas, and tar, varies with its quality. As it approaches anthracite in quality, the yield of coke is large and of gas small, while the reverse is the case with the fat or highly bituminous coals. From 50 to 75 per cent. is the general range of the yield of coke. Some bituminous coals, however, have not the property of melting and caking, and though good in other respects, are unsuitable for the manufacture of coke. Yet it by some authorities, that a very hard coke may be obtained by a slowly carbonization joined with a full e of coal, whatever may be the quality of and for this reason the tendency is to in- e the size of the ovens and the amount of charge. Upon some of the railroads in d the size of the ovens is stated to be square, and the charges about 8 tons pread in a thickness of about 4 feet. The f the process is 96 hours. With the and ovens, by making the charges increasing the quantity of air admit- the temperature, so as to t pro in 48, 24, or even 12 hours, will be obtained lighter and more fri- rding as it may be desired.—Coking in heap is the most common practice at nes of bituminous coal of the United and this is the oldest method. The coal is up in long ranges, extending sometimes t in length, with a width of 12 feet base, and a height of 6 feet. The piles de so that along the whole length an air extends through the centre on the The largest lumps are placed in the portion, and smaller and smaller pieces the outside. Stakes are set up at inter- the central line of the heap, which own to the base; when the pile is com- these are taken out, and the passages ve serve for the introduction of burning e the heap along its whole length. the thick black smoke and flame any portion, and this begins to show ce of ashes, the fire is kept down by lication of charcoal braise; and this goes l the whole heap is thus covered. It is for a few days to cool. Portions ex- the full action of the wind require, as process of making charcoal, a thicker of braise to check the consumption of product. When sufficiently cool, the coke n out. The process is not an economi- much of the inside coal being always ed to waste before the inner portions been coked. A method has been adopted Clyde iron works in Scotland, by which t of this waste is obviated. A mound is up of a circular form around a central y of brick, which may be 3 feet square base and rise 3 or 4 feet from the ground. s of the size of a brick are left at inter- ides, for the passage of the gases, and the lowest of these the coal around is so that flues extend through it to the circum- e of the heap. The diameter of the mound e 20 feet, and its height 4½ feet, sufficient the cover of ashes and cinders to reach the top of the chimney. The heap is by burning coals thrown into the chim- rom which the flames reach through the In 4 or 5 days, when the mound me thoroughly on fire, the apertures on outside and the top of the chimney are ed with plates and ashes, and the heap is left to cool for 8 days, after which the coke is drawn out.—The hardness of coke, as observed by Mr. James Nasmyth, and communicated by Prof. Faraday to the royal institution, is so great that pieces of it may be used to cut glass, which it does like the diamond.

COKE, Natural. At the coal mines of the lias formation, on both sides of the James river, and near Richmond, Va., beds of natural coke of good workable quality are met with, interstratified with the slates, sandstones, fire clay, and coal. On the north side of the river is a bed 5 feet thick, which lies slightly inclined toward the west. Several vertical shafts cut it, the deepest about 207 feet below the surface. The coke is of a nearly uniform character, so light as to float upon water, vesicular in texture, and of a bluish black color. The volatile ingredients of the coal are almost wholly wanting, and the coke does not differ in its properties and appearance from much of the more compact artificial varieties. Seventy feet above the coke, the agent which effected this change, and also altered the beds of fire clay and slate, is seen in an intercalated layer of trap rock of 15 to 30 feet in thickness. Immediately beneath the trap is a bed of carbonaceous fire clay 11 feet thick, baked and hardened by the action of the trap, and converted into very much such material as the coarser qualities of hard-burned fire brick. Its structure is columnar, the prisms, 5 and 6 sided, lying at right angles to the surface of the trap. In the coal slates, which fill the interval between the fire clay and the coke, the fossil carbonaceous stems are converted into coke. Under the coke bed is another stratum of indurated fire clay, and beneath this one of coal slates 20 feet thick. Another carbonaceous bed is then cut by the shaft; this is a thin layer of half-coked coal. Twenty feet below this is another coal bed of the usual bituminous composition, its structure made columnar by the trap, but in other respects unaltered.

COKE, Sir Edward, an English jurist, born Feb. 1, 1551, at Mileham, in the co. of Norfolk, died in Buckinghamshire, Sept. 3, 1633. At the age of 10 years he lost his father, and the estate, though considerable, was heavily encumbered by the jointure of his mother and the marriage portions of 7 sisters. Nothing of particular interest is related of his school days at the grammar school in Norwich, or in the university of Cambridge; we know only from his law writings that he must at an early period have been a diligent student, but without much turn for abstract science. His memory was a storehouse of pedantic learning, with very little critical discrimination; and he took as much delight, says one of his biographers, in turning the rules of prosody into doggerel verse as in reading the finest passages of classical authors. He left Cambridge without taking a degree, and at the age of 20 commenced the study of law at an inn of chancery, where he spent a year in acquiring a knowledge of the forms of writs and proceedings in courts, and then entered upon the study of general jurisprudence in the Inner Temple. His habit of study at that time is thus described by Lord Campbell: "Every morning he rose at 3, lighting his own fire. He read Bracton, Littleton, the year books, and the folio abridgments of the law, till the courts met at 8. He then went by water to Westminster, and heard cases argued till 12, when pleas ceased for dinner. After a short repast in the Inner Temple hall, he attended readings or lectures, and then resumed his private studies till 5, or supper time. This meal being ended, the moots took place, when difficult questions of law were proposed and discussed. . . . . Finally, he shut himself up in his chamber, and worked at his commonplace book, in which he inserted under proper heads all the legal information he had collected during the day. When 9 o'clock struck he retired to bed." This practice of retiring at 9 o'clock he kept up in after life, as well as the habit of early rising. He always gave a much larger part of his time to the law than is allotted to it in his celebrated metrical apophthegm:

> Sex horas somno, totidem des legibus æquis;
> Quatuor orabis, des epulisque duas;
> Quod superest ultro sacris largire Camœnis.

He was called to the bar a year before the expiration of the time prescribed for legal studies (at that time 7 years), in 1578, being then of the age of 27 years, and was soon after appointed reader (lecturer) of Lyon's Inn (an inn of chancery), which office he held 3 years, and so distinguished himself by his lectures that he came into much repute for legal learning, and his advice was eagerly sought by clients. Within that time he rose to the very highest rank in the profession by his argument in Shelley's case, the most celebrated case relating to real estate which is to be found in the English reports. He was thenceforth employed in most of the important cases in Westminster, was successively elected recorder of Coventry, then of Norwich, and lastly of London, and was appointed reader (law professor) of the Inner Temple. In 1592 he was, at the instance of Lord Burleigh, who had for some time known his great legal ability, appointed solicitor-general, and the following year he was returned to parliament as the representative of his native county of Norfolk, and was chosen speaker of the house. In 1594, the office of attorney-general becoming vacant, Coke calculated upon succeeding to it in regular course, but was unexpectedly met by a formidable claimant, Francis Bacon, backed by the influence of the earl of Essex. The queen, with much good sense, resisted the solicitation of her favorite, and appointed Coke; but it was the commencement of bitter and uncompromising hostility between the rivals, which, with alternating success, was ultimately disastrous to both. Four years after (1598) Coke lost his wife, a lady of an ancient family who had brought him a fortune of £30,000. His marriage with this lady had taken place (1582) not long after he had been called to the bar, and she had borne him 10 children. Though from his diary it would appear that he held her in great respect, yet he shortly after became a suitor for the hand of Lady Hatton, a young widow of some 20 years of age, granddaughter of the lord treasurer Burleigh, to which he was moved probably by two considerations: one, the lady's great wealth; the other, rivalship to Bacon, who was also a suitor, but was unacceptable to the Cecils, although nearly related to them by blood. Coke, on the other hand, was favored by them on account of his great wealth and high position, and perhaps also from jealousy of Bacon. Through the influence of the family, as we may presume, he was accepted, and the marriage took place just 4 months after the death of his first wife. But all the parties were involved in difficulty by the obstinate refusal of the lady to be married in public, probably owing to a secret aversion to a match so unsuitable to her years, the [illegible] ney-general being then near 50 years [illegible] The ceremony was therefore performed pri[illegible] ly, contrary to a canon of the church, [illegible] prosecution was instituted in the eccles[illegible] courts against all concerned, includi[illegible] father, who had now become Lo[illegible] It was eventually compromised upon [illegible] ble submission of Mr. Attorney, and a [illegible] tion granted by the archbishop, excu[illegible] misconduct of the defendants on the gr[illegible] their "ignorance of ecclesiastical law. [illegible] marriage was unproductive of [illegible] lady refused to take the name [illegible] lived but little with him, though wi[illegible] after the union she gave birth to a [illegible] who was afterward the subject of [illegible] mestic discord.—In 1600 Coke pu[illegible] 1st of the 11 parts of his reports. [illegible] parts were published in the followi[illegible] The preface is characteristic of th[illegible] He proposes no diminution of the [illegible] labor by any facility which his repo[illegible] to furnish. "My advice to the rea[illegible] says, "is that in reading of these or any [illegible] ports, he neglect not in any case the [illegible] the old books of years reported in fo[illegible] for assuredly out of the old fields [illegible] and grow the new corn." In his [illegible] works he often reiterates the same [illegible] did not encourage the use of a[illegible] cept for reference to the o[illegible] insists upon the study of [illegible] selves. The trial of the earls o[illegible] Southampton for high treason, which [illegible] red in the same year, brought out [illegible] in the character of Coke, which [illegible] ful to dwell upon. His statement of [illegible] opening the case was exa[illegible]rated, and [illegible] ner abusive in the hig[illegible] se: [illegible] was continued throughout [illegible] shock the public mind, altho[illegible] great harshness in criminal t[illegible] It [illegible] remembered that at that time [illegible]

d the aid of counsel, nor even the ad-
ends, which made violence and un-
the part of the prosecutor the more
ungenerous. It is supposed that Coke
rate pique against Essex for the part
in favor of the appointment of
-general, as before mentioned.
as was the manner of Coke in
n, the course of Bacon was still
us, who, as queen's counsel, volun-
his old and generous friend Essex,
n endangered his own interest in
vancement of Bacon. Upon the
he queen, the proclamation prepared
as adopted by the new monarch, in
to a more elaborate one proposed by
the first year of King James, the
Walter Raleigh upon a charge of
for a conspiracy to place the lady
t on the throne, again exhibited
d remained attorney-general) as
cutor, and on this occasion he
ublic feeling even more than in his
of Essex. To arrogance and vitu-
added an unfair attempt to convict
n evidence which he well knew
nt, and, in fact, inadmissible.
(and it was all which was pro-
nst him) was the deposition of Lord
who was not produced in court,
beside afterward retracted what he
to. By a statute passed in the
dward III., it had been expressly en-
no person should be convicted of
n but upon the evidence of two wit-
et in direct violation of this statute,
ut pretending to show its repeal,
isted in asking a conviction upon a
t the law had been changed, alleg-
crown could not stand a year upon
head, if a traitor could not be con-
circumstances." The deposition being
prisoner said: "You try me by the
ion, if you proceed only by cir-
without two witnesses." *A. G.*—
asonable speech." *R.*—"I appeal
king in this point, whether Cob-
sation is sufficient to condemn me."
he king's safety and your clearing can-
I protest before God I never knew a
ason. Go to, I will lay thee upon thy
e confidentest traitor that ever came
Then one of the commissioners mild-
the attorney-general for his violence,
h he sat down, as the reporter says,
chafe, and refused to say any thing
entreated by the commissioners to
which he proceeded in the same
re. By such an iniquitous course
he obtained a verdict of guilty;
was almost the inevitable result of a
in the mode that it was ordinarily
that time. Yet such was the pub-
tion that the sentence was not then ex-
ut after having been in prison several
then suffered to be at large, Raleigh
was re-arrested and executed under this illegal judgment.—The advancing favor of Bacon with the king now exasperated the former enmity of Coke against him. The literary renown of Bacon, and the personal regard shown for him by the late queen, although it had not procured him official station other than the honorary one of queen's counsel, had excited the jealousy of the attorney-general, and, according to some reminiscences preserved by Bacon, there must have been frequent and severe encounters between them. Their mutual hostility grew still more bitter as the rising fortunes of Bacon became apparent, till their public altercation so far exceeded the bounds of decency that Bacon wrote to Coke in a defiant tone, avowing that he would not take the office of solicitor-general while Coke remained attorney, but proposing for the sake of the king's service a more decorous carriage toward each other. It appears, however, to have been ineffectual, and Bacon's influence was brought to bear for the advancement of his rival in order to make way for himself, to which the king was more readily disposed in consequence of the efficient service rendered by Coke in the unravelling of the gunpowder plot and the prosecution of the parties concerned. He personally examined the prisoners before the trial, and one of them, Guy Fawkes, was put to the rack, or, as it was then expressed, made to kiss the duke of Exeter's daughter, a name taken from the minister of Henry VI., who first introduced that instrument of torture. On the trial, Coke opened the case to the jury at enormous length, interlarding his diatribe against the prisoners with quaint conceits, such as still amuse the reader in the commentary on Littleton. "S. P. Q. R. (he said) was sometimes taken for *senatus populusque Romanus*, but now they may truly be expressed thus: *Stultus populus quærit Romam.*" He then narrates the fable of the cat who shaved his crown in order to get rid of the suspicion of the mice, saying: *Quod fueram non sum; frater, caput aspice tonsum;* but some of the knowing ones answered: *Cor tibi restat idem; vix tibi præsto fidem.* "Talk what you will, we will never believe you; you have still a cat's heart within you. You do not watch and pray, but you watch to prey." "And so (said Coke) have the Jesuits, yea, and priests too, for they are all joined in the tails like Samson's foxes." To Sir Everard Digby, one of the prisoners in the same case, who confessed the charge, but prayed the mercy of the king as to the mode of death, and also in behalf of his family, Coke answered that he must not look to the king to be honored in the manner of his death, but was rather to admire the moderation of the king in that for so important a crime no new torture answerable thereto had been devised to be inflicted on him. "And as for his wife and children, since he was content for the Catholic cause to incur the ruin of himself, his wife, estate, and all, he should have his desire, as it is in the Psalms: 'Let his wife be a widow and his chil-

dren vagabonds,' &c." The trial of Garnett, the superior of the Jesuits, who was implicated in the same plot, called forth still greater effort on the part of Coke to show his zeal for the king and severity to the prisoner. He said in his speech that the prisoner "was a corrector of the common law print, with Mr. Tottle the printer, and now he is to be corrected by the law." Then referring to his being a superior of the order of Jesuits, he said: "He is indeed superior to all his predecessors in devilish treason—a doctor of six D's—*D*issimulation, *D*eposing of princes, *D*isposing of kingdoms, *D*aunting and *D*eterring of subjects, and *D*estruction." And he concluded with: *Qui cum Jesu itis, non itis cum Jesuitis.*—In 1606, Coke was appointed chief justice of the common pleas, being succeeded by Hobart as attorney-general, and Bacon was appointed solicitor-general. From the time he entered upon this office he exhibited an integrity and independence in striking contrast with his former violation of private rights in his zeal to serve the crown. Indeed, the difference is so great that we hardly recognize Coke the chief justice as the same person with Coke the attorney-general. Thus he granted writs of prohibition to restrain the court of high commission (a tribunal established by Elizabeth) from issuing process for the arrest of parties complained against, which practice, recently introduced in place of citation, Coke maintained to be contrary to Magna Charta. (See Langdale's case, 12 Rep. 50; Chaner's case, *id.* 82.) So he resisted the pretension of King James to the right of sitting in person to hear causes, which was a device suggested for the purpose of getting rid of prohibition and appeal. The judges being summoned before the council for their opinion upon this proposition, Coke answered that by the law of England, the king in his own person cannot adjudge any case, either criminal, as treason, felony, &c., or betwixt party and party; for which he cited the Magna Charta and other statutes, which secure to all persons the right to have justice in the courts (*quod justitiam habeant et recipiant in curia domini regis*); and he also urged against it, that if the king should give wrong judgment there would be no remedy. James said that he thought the English law was founded in reason, and why should not the king have reason as well as the judges? To which Coke answered, that causes were not decided by natural reason, but by the artificial reason and judgment of the law, which law is an art which requires long study and experience; and that it was the measure by which to try the causes of his majesty's subjects, and by which his majesty was protected. The king took umbrage at being supposed to be under the law, but Coke said it was written by Bracton: *Rex non debet esse sub homine, sed sub Deo et lege.* Prohibitions were also issued from the common pleas to check the arbitrary proceedings of the lord president of Wales, and of the lord president of the North. Complaint having been made to the king of these prohibitions, and the judges having been summoned, Coke justified the proceeding, and concluded with saying: "We do hope that whereas the judges have been more often called before your lordships than in former times they have been (which is much observed and gives much emboldening to the vulgar), after this day we shall not be so often upon such complaints hereafter called before you." (See 12 Coke, 50.) In like manner, when the question came up as to the king's prerogative to impose penalties and otherwise alter laws by proclamation, and the opinions of the judges were demanded by the king for the purpose of enforcing the power claimed, Coke resisted, and finally got the rest of the judges to concur in an answer that a proclamation was no law. (12 Rep. 74.) The effect of this bold opposition to arbitrary power can hardly be overestimated. It at least checked abuses, and it led to investigation as to the limit imposed by law. Although Coke had but little turn for abstract reasoning about natural rights, he was inflexible in maintaining such rights as had been recognized by law.—In 1613 Coke was removed from the office of chief justice of the common pleas, which he had filled 7 years, to the chief justiceship of the king's bench. The change was intended partly as a penalty for his recusant conduct in the matters before referred to, but chiefly to favor the advancement of Bacon, who wished the place of attorney-general, and Hobart, who then held the office, was willing to exchange for the chief justiceship of the common pleas, but not of the king's bench. The reluctance of Coke to leave the common pleas may be explained by the fact that far the larger part of the civil business of the kingdom was transacted in that court. It had exclusive jurisdiction of all cases relating to real property, as it still has; and also of all personal pleas between private parties, with certain exceptions, viz., actions for injuries alleged to have been committed vi et *armis*, or actions founded upon fraud, conspiracy, or other criminal conduct, both of which classes belonged to the king's bench; and that court also took jurisdiction of all cases (except real actions) in which the defendant was an officer of the court, or was in the custody of the marshal or prison keeper for a breach of the peace. This latter class was at that time inconsiderable, but by a fiction which was introduced into the pleadings, viz., the supposed arrest of the defendant for a trespass, the court of king's bench acquired jurisdiction of all personal actions, and the litigation in the common pleas became comparatively less important. Coke called the common pleas the lock and key of the common law; and it has been universally conceded that no other man ever presided in that court so eminently fitted for the place by the extent of his learning and the peculiar legal habit of his mind. It appears from a letter of Bacon to the king, that it was designed to put Coke upon his good behavior, and to prepare the way for his final dismissal from office if he should fail to become conformable to the views

He was in fact dismissed 3 years
1616); but in the mean time, with
of losing his place by persistence
of judicial independence which he
d, he fearlessly resisted
royal prerogative, and the
of court minions to pervert his
on of the law to improper purposes.
e being demanded to supply the ne-
the crown, Coke munificently con-
,000; but when the question of the
benevolence was proposed in the star
according to Attorney-general Bacon's
o the king), the chief justice, though
with some hesitation that it was
it upon the ground "that a bene-
s a free-will offering, not a tax;" and
that what was then done "should
no, nor the show, no, nor so
of a tax." In the case of
st whom a charge was attempted
out of high treason, upon no other
that upon breaking open and search-
e a manuscript sermon was found,
never preached, in which treason-
was supposed to be contained, as it
be hopeless to convict him upon that
Attorney-general Bacon, by direction
undertook to get the opinion of the
re the trial. Coke objected strong-
council "that judges were not to
ns by fractions, but entirely according
whereupon they should settle upon
and that the auricular taking of
single and apart, was new and danger-
seems that they had been called up
. He reiterated the same objection
on called upon him privately with pre-
and yielded at last only when all the
dges had submitted. What the opinion
not informed, except by the despatch
the king, in which he says: "I send
my lord Coke's answers—I will not
scripts, much less oracles; they are
wn hand." The last remark was proba-
on of himself for the unsatisfac-
the answers.—Two other mem-
nces occurred of Coke's inflexibili-
ining what he believed to be right,
exceedingly obnoxious to the king, viz.:
with the court of chancery, and his
of the interference of the king in the
of the commendams. The court of
had for a long time claimed and exer-
power of correcting judgments of other
The limit of this power and the prin-
n which it should be exercised had
well defined. There were many cases
the rigid practice at common law,
e was done, and relief could be had
equitable administration of chance-
some of the chancellors had proceeded
had a general right to review the
of all other courts. This was one
inst Wolsey. It was a dan-
as the court was not subject to fixed rules, and its mode of proceeding was derived from a foreign law. Coke wholly denied the authority of the court as thus claimed, founding his objection upon a statute passed in the reign of Edward III., the object of which statute was to prevent appeals to the courts of Rome, but which, without any specification of those courts, enacted generally that whoever should, after the delivery of a judgment in the king's courts, impeach its authority in any other court, should incur the penalty of a *præmunire*. Under this statute he and his associate judges declared it to be an indictable offence to question a judgment of the king's bench or common pleas; and an effort was made to get an indictment against the parties, solicitors, and officers of the court of chancery, in two cases in which injunctions had been granted by the chancellor against judgments at law. But as it appeared that gross fraud had been committed in the obtaining of these judgments, the grand jury could not be persuaded to bring in a bill. The proceeding having attracted public attention, and Chancellor Ellesmere being at the time too ill to attend personally to the defence of his court, the king appointed commissioners to inquire into the subject of dispute. The report of the commissioners (which was drawn up by Bacon or with his advice) sustained the proceeding of the chancellor, and certified "that the precedents of that kind were many and precise on the point, and constant, and in good times, and allowed many times by the judges themselves;" and they further certified that chancery was not restrained by the statute of *præmunire* from giving relief in such cases. Proceedings were thereupon instituted in the star chamber against the private parties concerned in resisting the authority of the chancellor. The conduct of Coke on this occasion has been generally censured; but there can be no doubt that it had the effect of establishing with more precision the rule by which the interposition of the court of chancery should be regulated. The case as to the commendams was this: In a suit against the bishop of Lichfield and Coventry respecting a benefice, the defendant pleaded that he held it in *commendam*, which was an appointment by the king in certain cases until a new incumbent could be regularly appointed, the name being taken from the phraseology of the appointment, which was in form a mere recommendation. The question was involved, among other points, as to the right of the king to make such grants. Upon being advised of the discussion, the king sent a message by the attorney-general to Sir Edward Coke signifying his pleasure that all proceedings should be stayed till the judges should have a conference with his majesty on the subject. A meeting of all the judges having been held for consultation, it was resolved by them that the court ought to proceed as though they had received no notice, which was accordingly done, and a memorial signed by the 12 judges (*i. e.*, of the king's bench, common pleas, and exchequer) was sent to the king, in which they say: "We hold it our

duty to inform your majesty that our oath is in these express words: 'that in case any letter come to us contrary to law, we do nothing therefore but certify your majesty thereof, and go forth to do the law notwithstanding the same.' We have advisedly considered the said letter of Mr. Attorney, and with one consent do hold the same to be contrary to law, and such as we could not yield to the same by oath." A sharp response followed from the king, ordering the judges to proceed no further till his coming in town. He then called them before him, and commented severely upon their course of proceeding and the form of their letter; upon which the judges kneeled and craved pardon. But Coke, though he expressed sorrow for any error of form, still persisted in defending the substantial right of what he had done. After some altercation between the chief justice and the attorney-general, the question was put to the several judges, "whether, if at any time, in a case depending before them, his majesty conceived it to concern him either in power or profit, and thereupon required to consult with them, and that they should stay proceedings in the mean time, they ought not to stay accordingly?" All the judges, except Coke, answered in the affirmative; but he replied that "when the case should be, he would do that which should be fit for a judge to do." The king himself seems to have been impressed by the noble bearing of the chief justice, for, after a general admonition, they were all dismissed, and the court was permitted to proceed in the cause of the bishop, which was finally decided against him.—The active measures taken by Coke for the conviction of the murderers of Sir Thomas Overbury, and the proof which was elicited thereby of the complicity of the favorite Somerset and Lady Essex, together with some mysterious hints concerning transactions in which the king himself, as was rumored, was in some degree implicated, gave further offence to James, and he probably intended the removal of Coke upon the first favorable opportunity. This intention was no doubt precipitated by the enmity of the new favorite Villiers, who had been thwarted by the chief justice in a corrupt attempt at the disposition of a lucrative clerkship in the king's bench. The removal was, however, put upon very different grounds. Among the charges which he was required to answer before the council were: 1, the alleged concealment of a bond belonging to the crown; 2, his misconduct in the dispute with the chancellor respecting injunctions; 3, his disrespectful conduct to the king in the matter of the commendams. A few days afterward he was again called before the council, when sentence was pronounced that he be suspended from the council and from his judicial functions till the king's pleasure should be further known, and in the mean time that he should revise his books of reports, wherein it was alleged that "many extravagant and exorbitant opinions were set down for good law." After the summer vacation he was again cited before the privy council to answer as to revision of errors in his reports, when he made a specification, showing that there were not more errors in his 11 books of reports, containing 500 cases, than could be found in a few cases in Plowden. The whole charge was indeed frivolous; but a *supersedeas* nevertheless issued, removing him from his office, and Montague was appointed in his place. A contemporary writer said that "the common speech was that 4 *p*'s had overthrown the chief justice, viz.: *p*ride, *p*rohibition, *p*ræmunire, and *p*rerogative." It was notorious at the time that the new judge, before he took his place, was obliged to enter into a written agreement to dispose of the disputed clerkship for the benefit of Buckingham.—Not long after his disgrace a strange occurrence took place—one of the perplexing anomalies of his life. This was the offer of his daughter in marriage to Sir John Villiers, elder brother of Buckingham. The young lady was only 14 years of age, but was a rich heiress, as the estate of her mother, Lady Hatton, was entailed upon her, and she also had an expectancy from her father's immense wealth. The match had been sought by Villiers, who was poor, and had been rejected by Coke while chief justice. But he determined on availing himself of it now for the purpose of recovering from his disgrace and humbling his enemy. The latter consideration was, perhaps, the prominent one; and any one who has read the taunting letter which Bacon wrote to him under pretence of consolation and advice, can imagine how the haughty spirit of the chief justice must have been chafed. But the lady Hatton, who was not on good terms with her husband, and had not been consulted, refused consent, and carried off her daughter at night to a place of concealment. Coke, having ascertained where they had fled, pursued with an armed force of his retainers, broke open the house, and took his daughter away. The mother appealed to the privy council. Bacon (who had been appointed lord keeper) warmly supported her, and proceedings were instituted (probably at his instance) in the star chamber against Coke. The king, however, who was then in Scotland, sharply reproved the lord keeper, and on his return the parties were so far reconciled that the marriage took place. Coke was restored to his place in the privy council, but received no other appointment, except temporarily as one of the commissioners of the treasury while the office of lord treasurer was vacant. Bacon, on the other hand, entirely recovered a good understanding with the king, was shortly after made lord chancellor, and attained the pinnacle of renown by the publication of the *Novum Organum*. A copy of that work was presented to Coke by the author. Coke expressed his bitter personal feeling, and at the same time his contempt of philosophical studies, by writing this distich on the title-page, which bore a cut of a ship sailing through the pillars of Hercules:

deserveth not to be read in schools,
t to be freighted in the ship of fools—

to a work of Barclay, which had then
able notoriety, entitled "Ship of Fools."
ord treasurer's office, which Coke expected
ve had, was finally given to Montague, who
ceeded him as chief justice; and instead
g restored to the chief justiceship,
was filled by an obscure lawyer.
was deeply exasperated may well be
sed. but his revenge was near at hand.—In
of all the mortifications to which he
subjected, he had not intermitted his
ts. The 12th and 13th parts of his
were prepared, though not published,
contained the obnoxious opinions he
upon proclamations, the court of
n, and some other matters. He
commenced his great work, the "Com-
on Littleton." To give a just idea of
would quite exceed our limits. Ut-
ute of orderly arrangement, it is exu-
ning and curious illustrations
; vigorous in style, and in-
even to non-professional readers by
t and amusing analogies with which
discussions are interspersed. The
y is written in English, for which
ed it necessary to make an apology in
e. The reports, that is, the 11 parts
then appeared, were printed in Nor-
French, the language of the year books;
th and 13th parts were not published till
having been translated into English, as
subsequently the other parts. The re-
had one peculiarity which has never been
ured upon by any other author, viz.: that
nt many questions to have been re-
which in fact did not arise in the cause,
hich were not at all events decided; and
he disposes of according to his own judg-
with abundant citations of authorities.
was the respect entertained for his
that these resolutions were always re-
of equal weight with the opinions of
actually expressed.—The closing
the life of Coke was brilliant and
He was a member of parliament in
when the motion for a supply was
succeeded in getting a reference of sup-
grievances to a committee of the whole
His first measure was a report upon the
grants of monopolies to Sir Giles Mom-
l Sir Edward Villiers, which report
ed to, and sent to the upper house for
nce. Consentaneously with this, an in-
on of judicial abuses was instituted,
aimed at Bacon; and although Coke
acting as chairman of the committee,
directed all the proceedings, prepared
arges, and prescribed the mode of prose-
n. From the fact that Coke did not ap-
pr nently in the investigation, it has
osed that his personal resentment
acon had been allayed; but Bacon
well knew with whom the proceedings had originated, and how formidable an attack he might expect. Coke was to have been the manager of the prosecution before the house of lords; but Bacon shrank from the contest, and by a plea of guilty sought to shelter himself from his revengeful adversary under the sympathy of the lords and the dispensing power of the crown. We may suppose that Coke was not inactive, and suffered not the fallen chancellor to gain any advantage from delay or want of urgency. The sentence was severe, being a fine of £40,000, imprisonment in the tower during the king's pleasure, incapacity ever to hold any office under the government, or to sit in parliament, and a prohibition ever to come within the verge of the court. The influence of a powerful and vindictive enemy is apparent. It is not known that the two adversaries after this time ever met, or that any correspondence passed between them. Coke followed up his success by carrying through the house an address against the proposed match of Prince Charles with the infanta of Spain. This called forth a threatening response from the king, in which he mentioned Sir Edward Coke by name as particularly obnoxious to censure. Finally, in a letter to the speaker, the king intimated his intention "to punish any man's misdemeanor in parliament, as well during the sitting as after." Coke immediately moved a protestation for the privileges of the house, which having been reported by a committee, setting forth the right of every member of the house to freedom of speech, and the "like freedom from all impeachment, imprisonment, and molestation," on acount of any thing said or done in parliament, it was carried and entered on the journals of the house. The king immediately prorogued parliament, sent for the journals, and with his own hand tore out the offensive protestation. This was followed by a dissolution, and the arrest of Coke, Philips, Pym, and other leaders of the commons. The ex-chief justice was confined in the tower, but after some months' imprisonment was set at liberty, upon the intercession of Prince Charles; his name was however stricken out of the list of privy councillors. He was returned again as member of parliament on the accession of Charles I. (1625), and obtained the appointment of a committee on expenditures, which was proceeding so vigorously, that the king suddenly dissolved parliament. An attempt was made to keep him out of the next parliament by appointing him sheriff of the county of Norfolk; nevertheless, he was returned as a member, but the parliament was dissolved before his right to a seat was settled. In 1628 he was again elected, and he proceeded at once to attack the recent illegal measures of the king. The first was commitments, by order of the privy council, without specifying the cause in the warrant; and he carried through two resolutions, which constituted the basis of the famous habeas corpus act, passed many years after, in the 31st of Charles II. (1679). He then

framed the famous Petition of Right. It enumerated the prominent grievances of the nation from the abuse of prerogative—imprisonment without specification of cause, levying forced taxes, billeting soldiers at free quarters, the appointment of commissioners for the trial of offenders by martial law—and declared them all to be contrary to the laws and customs of the realm. This was carried through the house in spite of all the subterfuges of the king, and finally passed by the lords after a fruitless attempt to nullify the bill by a clause which was rejected by the commons; and after a treacherous attempt by the king to cheat the house by an evasive form of assent, he was finally compelled to approve the bill, and it became a law. In every step of this arduous contest, Coke, now in his 77th year, rendered important service by his sagacity and firmness. It was his last appearance in public; though he survived 6 years, he lived in retirement. During this time he prepared a new edition of the commentary on Littleton, and wrote the second, third, and fourth Institutes. He resided at Stoke Pogis, in the same county with Hampden. In 1634, when he was on his deathbed, his house was searched by order of the king for seditious papers, and all his manuscripts were carried off. He died 2 days afterward, in the 83d year of his age.—Of the demeanor of Coke at the bar and upon the bench we have some hints in a letter of Bacon written to him shortly after his dismissal from the king's bench; but considerable allowance is to be made for the ill-will that had long existed between them: "As in your pleadings you were wont to insult over misery and to inveigh bitterly at the persons" (accused), "which bred you many enemies, the effects of which now appear, so you are still wont to be careless in this point—to praise or disgrace upon slight grounds, and that sometimes untruly, so that your reproofs or commendations are for the most part neglected and contemned, when the censure of a judge, coming slow but sure, should be as a brand to the guilty and a crown to the virtuous. You will jest at any man in public without respect to the person's dignity or your own. This disgraceth your gravity more than it can advance the opinion of your wit." In the same letter Coke is reproachfully charged with a greed of wealth and want of generosity to the poor. "Having the living of a thousand" (means of supporting a thousand), "you relieve few or none. The hand that has taken so much, can it give so little? Herein you show no bowels of compassion, as if you thought all too little for yourself, or that God had given you all you have, if you think wealth to be his gift, ... only to the end you should still gather more and never be satisfied, but try how much you could gather, to account for all at the great and general audit day. We desire you to amend this, and let your poor tenants of Norfolk find some comfort, where nothing is spent toward their relief, but all brought up hither to the impoverishing of your poor country." Yet it is related of Coke that when he was dismissed from the office of chief justice, he had the generosity to give to his servants who chose to continue with him all they would have made had he remained in office. As to his wit on the bench, though it might be inferred from Bacon's letter that he often jested at the expense of his own dignity, yet a solitary joke is all that is reported by his biographers, viz.: that when Dr. Cowell's "Interpreter" was on some occasion quoted, Coke contemptuously referred to the learned civilian as Dr. Cow-heel. But he must have had a capacity for better things, judging from his apophthegm respecting ecclesiastical patronage, that "livings ought to pass by livery and seisin and not by bargain and sale." It should be remarked that Coke exemplified his rule in the use of the large patronage which he possessed. We have the following account of his person in Lloyd's "Worthies": "The jewel of his mind was put into a fair case, a beautiful body with comely countenance—a case which he did wipe and keep clean, delighting in good clothes well worn; being wont to say that the outward neatness of our bodies might be a monitor of purity to our souls." It is said that, except a slight attack of gout, he was never sick till the age of 80.

COKE, THOMAS, D.D., LL.D., one of the first bishops of the Methodist Episcopal church, born at Brecon in South Wales, Sept. 9, 1747, died at sea, May 2, 1814. The only child of his parents, he was early placed in a grammar school in Brecon, where he remained until he was 16 years of age, when he was sent to Oxford, and the succeeding year entered a gentleman commoner at Jesus college in that university. On returning to Brecon, he was chosen common councilman, and at the age of 25 mayor; but pursuing his studies meanwhile, he took out his degree of D.C.L., June 17, 1775. Soon after this he entered the ministry of the established church, and obtained a curacy at South Petherton. His preaching, however, was thought too evangelical, and he was finally excluded from the pulpit. Sympathizing strongly with the Methodists, he sought an interview with Wesley, which resulted in his joining that society and being appointed to London, where his zeal and talents as a preacher soon brought him into favorable notice. He rendered valuable assistance to Wesley in procuring what was called the deed of declaration, which provided for the settlement of the Methodist chapels in the connection, and restricted the conference to 100 of the preachers and their successors for ever. So rapidly did he rise in public estimation, and so fully had he gained the confidence of Wesley, that he was appointed president of the Irish conference in 1782. The American revolution having resulted in dissolving not only the political but the ecclesiastical relation between England and the colonies, Wesley set apart Dr. Coke by ordination as bishop of the Methodist church in America, and gave him authority to ordain Francis Asbury to the same

as joint superintendent. In 1784 he ar-
n New York, and after remaining a short
preaching with great acceptability, he
; an interview with Asbury, who was then
laware, and to whom he communicated
of his mission. A conference be-
on Dec. 25, Dr. Coke was duly recog-
and under its authority he proceeded on
th to ordain Asbury a bishop, and as such
vere duly accredited as the joint superin-
ts of the church in America. In com-
with Asbury he travelled, visiting the dif-
conferences, until June, 1785, when he
d to England, and visited Wales, Scot-
Ireland. Subsequently he returned to
and attended the conferences, travel-
nsively throughout the entire con-
The first mission which he established
West Indies, in 1786, whence, after
several islands, he went to South
and engaged again in the regular work
copacy. After travelling through the
e embarked from Philadelphia for Eng-
n 1787. Soon after the session of the
conference he visited with Wesley the
isles, and after spending some time, re-
England. The conference having ap-
d 3 missionaries for the West Indies, and
desirous of again visiting those islands, he
panied them in 1788; and after having
through the islands, stationing preachers
eral of them, he sailed for the continent,
rived at Charleston in 1789. After visit-
the conferences in the connection, and
ion with Asbury making provision for
nts of the churches under their care, he
ed to England, and reported to Wesley
ogress of the church in the islands and
of the western continent. Again in 1790
d him among the West India islands,
e, having fulfilled his mission, he proceed-
the continent and made the round of the
ences. While in Virginia he heard of the
of Wesley, and the intelligence was so
ng to him that he resolved on returning
liately to England. With this view he
to Philadelphia, and remained some time
g a passage, during which he preached
d night. At length, hearing a vessel was
from New Castle, he repaired to that place
barked. At the conference in England
chosen secretary. The revolution which
ken place in France opening a field for
nt missionaries, he conceived the idea
ing it, and accordingly set out for that
y. But as he could not obtain a congre-
in Paris, he returned to England, and
d his time to soliciting aid for missions,
preparing with Mr. Moore, who, with
f and Dr. Whitehead, had been desig-
by Mr. Wesley as his biographers, a life
t distinguished man. This work was
hed in 1792. The conference this year
d him to prepare a commentary on the
Scriptures, and he made preparation for
g upon that work. He did not, however, allow it to interfere with his previous duties as a kind of missionary bishop. Accordingly, we find him again in the West Indies on his way to the continent, where he attended the conferences, went to St. Eustatius, and returned to England in 1793. He was engaged while on the passage in writing his commentary, but little opportunity having been afforded him for that work during his absence. With a view of settling some serious difficulties which had arisen in the West Indies, he visited Holland; and on his return in 1794, he devoted himself more particularly to the preparation of his commentary and soliciting subscriptions for his missions. In 1795 he projected a mission among the Foolahs in Africa, and sent out a company of mechanics, but it proved a signal failure. In 1796 he again embarked for America, where he continued fulfilling his duties as bishop until 1797, when he went to Scotland, and thence to Ireland. After the session of the English conference he again turned his course to America, where, after being most cruelly treated on board the vessel, it having been taken by a privateer, he arrived plundered of every thing but his books. He remained, visiting the conferences from one extreme of the continent to the other, until 1798, when he again returned to England, and entered upon the work of soliciting aid for missions. During this visit he devised a plan of domestic missions for Ireland, and also established a mission in Wales. Before leaving again for America, he published parts of his commentary, comprising the Old Testament, in 6 vols. 4to. The remainder was not completed until 1807. The years 1802–'3 were mostly occupied in this work, so that he did not make his 9th and last visit to America until 1803. When his labors here were finished, he returned, and established a mission in Gibraltar. From this time until 1808 he was engaged in travelling to various parts in aid of the missionary cause. Meanwhile he had finished his commentary, made preparations for a history of the West Indies, a history of the Bible, and had compiled a system of philosophy. Through his influence a mission was established in 1811 at Sierra Leone, and several missionaries sent out. In 1813 he opened a correspondence with Dr. Buchanan in regard to India, which resulted in a determination on his part to establish a mission on the island of Ceylon. At the conference this year 5 preachers volunteered to go with him; and such was his zeal, that when the conference hesitated on account of the expense that would be incurred, he furnished the money from his own private purse. All things being in readiness, the missionaries with their families embarked on board the Cabalra, Dec. 30, and after having been out 4 months, he was found dead in his cabin.

COL (Lat. *collum*, a neck), a French name for a narrow passage between two mountains, used as a prefix to numerous passes of the Alps, as the Col de Pertuis.

COLAIR, a lake of Hindostan, in the district of Masulipatam, presidency of Madras, 5 m. E. from Ellore, in lat. 16° 40′ N. and long. 81° 20′ E., formed from the waters of the Weyairoo, Tumulairoo, and Boodamair rivers; area about 160 sq. m. Measures have been recently taken for its drainage, by which the bed would be made available as arable land for supporting a population of about 7,000.

COLAPOOR, or Kolapoor, a rajahship of the Deccan, in the province of Bejapoor, Bombay presidency, British India, bounded W. by the Ghauts, E. and S. by Belgaum, N. and N. E. by Sattara; area, 3,445 sq. m.; pop. including dependencies, about 500,000, mostly Rajpoots and Ramooses. The latter are a predatory, warlike tribe, resembling the Bheels, to whom, however, they are superior in intelligence. The people of certain maritime towns formerly subject to the rajah were much addicted to piracy, and in 1765 the Bombay government undertook to check them by sending an expedition against Colapoor. The fort of Malwan was captured, and some satisfaction was obtained, but the evil was not entirely suppressed until 1812. The country was afterward repeatedly occupied by British troops, with the avowed purpose of checking domestic misrule. In 1842 the government was confided to an agent of the British, against whom a general rebellion was aroused in 1844. The rising was put down by force of arms, and the control of the state was thenceforth exercised directly by the company in the name of the rajah. —Colapoor, the capital of the above rajahship, is situated in a secluded valley, little visited by Europeans, 185 m. S. E. of Bombay, and 130 m. S. of Poonah; lat. 16° 42′ N., long. 74° 18′ E. It is fortified, though with little strength, and at the commencement of the British occupation, when it surrendered without resistance, was excessively crowded and dirty. It has since been much improved. The first decided outbreak in the Bombay presidency, during the rebellion of 1857, occurred here, Aug. 1, when the 27th regiment native infantry murdered 3 of their officers. The others escaped through the loyalty of a native lieutenant, whose wife also saved the lives of the European ladies at the station at the expense of her own. The mutineers, after plundering the treasury and then resting for the night, marched off toward the coast, and were gradually nearly all destroyed by different detachments. The remainder of the regiment was disbanded.

COLAR, a town of Hindostan, in the native state of Mysore, 40 m. N. E. from Bangalore, in lat. 13° 8′ N. and long. 78° 10′ E. It is surrounded by a mud wall and deep ditch, and defended by a stone fortress. It is the birthplace of Hyder Ali, and has a handsome mausoleum erected to his memory by his son. It contains also about 700 houses, a mosque, a college for Mussulman priests, and the tomb of Feth Mahomet, the father of Hyder Ali. Colar was taken by the English in 1768, but soon after regained by the natives.

COLBERG, or Kolberg, a strongly fortified Prussian town, in the province of Pomerania, district of Köslin, on the Persante, near its mouth in the Baltic; pop. 10,000. It possesses a harbor called Münde, and contains a cathedral, an ancient ducal castle, now used for a charitable institution, several churches, hospitals, factories, salt works, distilleries, extensive salmon and lamprey fisheries, and considerable export trade. Colberg is memorable for the sieges it sustained in 1760 and 1806.

COLBERT, Jean Baptiste, marquis de Seignelay, a French statesman, born at Rheims, Aug. 29, 1619, died in Paris, Sept. 6, 1683. The son of a merchant, he obtained employment as a clerk in an Italian banking house at Paris, at the recommendation of Mazarin, who soon afterward intrusted him with the management of his private affairs. On his deathbed the cardinal said to Louis XIV.: "Sire, I am indebted to you for all that I possess; but I think I am requiting all your majesty's favors by giving you Colbert." At once admitted to the king's confidence, he began by exposing the maladministration of Fouquet, whom he succeeded in 1662 as general comptroller. Colbert's administration became a blessing to France. Order was restored in the finances, the revenue increased, and the king's treasury was now enabled to furnish the means for foreign wars as well as for internal improvements. The public debt was greatly reduced, and the manufacturing interest, long neglected, was revived. Several large manufactories were established at the expense of the government, the most celebrated of which was that of the Gobelins. Land taxes were lessened and more justly assessed; the excise upon salt was reduced; highways and roads were kept in good repair, and new ones established; the Atlantic was united to the Mediterranean by the canal of Languedoc, and water communications were extended through nearly all parts of France. Appointed minister of the navy in 1668, this department soon showed signs of returning activity. The French fleet, which consisted of but 50 ships, numbered in a few years 198 men-of-war. With the same liberality he encouraged literature, science, and art. He founded the *académie des inscriptions et belles lettres*, the academy of science, and the academy of architecture, sculpture, and painting; while at Rome he reëstablished the French school of painting. He founded the observatory and the *jardin des plantes*; increased the royal library and the collection of coins and medals; bestowed pensions and encouragements on the most eminent artists and scholars of the day; enriched Paris with the garden of the Tuileries and the colonnade of the Louvre, and with many quays, bridges, boulevards, public buildings, triumphal arches, and monuments. He opposed the wars and follies of Louis XIV., and succeeded for many years in restraining him within the limits of reasonable ambition; but in 1670 his favor was on the wane, and the influence of Louvois, the minister of war, prevailed. Then commenced a series of European

at partly exhausted the wealth and re-
accumulated by Colbert. He continued,
serving the government, but the reck-
e which was now pursued, in spite of
counsels, impaired his usefulness. He
m so long engaged in public affairs that
to retire, but he suffered much from
de of the king. During his last
gave vent to his feelings by saying:
done for God what I have for that
XIV.), I would have twice deserved
n, and I do not know now what will
of me." Thus died one of the greatest
France ever had. He was hated by
es, perhaps by the king himself, but
the people, who held him responsi-
es which had been established not-
his remonstrances, and for vexa-
which he was not the author. To
his funeral against the attacks of the
it took place at night, attended by a
escort. A monument was erected by
y in the church of St. Eustace, and his
placed in 1844 in the Palais Bour-
rity has placed Colbert among the
nent statesmen; and although his
policy has been the object of severe
ion, it cannot be denied that it was
best adapted to his time and coun-
EAN BAPTISTE, marquis de Seignelay, son
preceding, born at Paris in 1651, died
1690. He succeeded his father as sec-
f the navy and minister of the king's
ld, and raised the French navy to its
power by his capacity and energy. In
led in person the maritime expedition
Genoa.

BURN, WARREN, an American mathe-
n, born at Dedham, Mass., March 1, 1793,
Lowell, Sept. 13, 1833. He was the eldest
a large family of children. His parents
s very much straitened in their cir-
, and during his childhood made
removals to different manufacturing
where Warren as well as some of the
dren found employment in the facto-
early manifested a remarkable taste
matics, and having acquired the trade
achinist, he entered Harvard college in
He was graduated with honor in 1820,
n after opened a select school in Boston.
autumn of 1821 the first edition of his
Lessons in Intellectual Arithmetic" was
While in college the necessity of
work had been forced upon his mind,
plan digested. He was accustomed to
t "the pupils who were under his tui-
ade his arithmetic for him;" that the
y asked, and the necessary answers
tions which he gave in reply, were
that book. No other elementary
n arithmetic ever had such a sale. More
000,000 copies have been sold in this
, and its sale still continues at the rate of
00,000 copies per annum here, and 50,-
Great Britain. It has been translated into most of the languages of Europe, and, by the missionaries in the East, into several of the languages of India. After teaching about 2½ years, he was offered the situation of superintendent of the Boston manufacturing company at Waltham, in April, 1823, with a large salary. He accepted the post, and in August, 1824, he was appointed superintendent of the Merrimack manufacturing company at Lowell. Here he projected a system of lectures of an instructive character, presenting commerce and useful subjects in such a way as to gain attention, while their mode of treatment would enlighten the popular mind. In the autumn of 1825 he commenced a course of lectures on the natural history of animals, which he illustrated abundantly with an excellent magic lantern. This he followed in subsequent years with lectures on light, upon the eye, the seasons, electricity, hydraulics, astronomy, &c. In the mean time, while his official duties were faithfully and efficiently performed, and the superintendence of the schools of the infant city was added to his labors, he had not forgotten the design formed in his college days of furnishing to the children of the country a series of valuable text books on elementary mathematics. His "Sequel" had been published just before he left Waltham. In 1828 he published his "Algebra." Both have been successful as school books, but not to the same extent as his "First Lessons." The "Sequel" was revised by him in 1833. In May, 1827, Mr. Colburn was elected a fellow of the American academy of arts and sciences. He was also for a number of years one of the examining committee on mathematics in Harvard college.

COLBURN, ZERAH, a mathematical prodigy, born at Cabot, Vt., Sept. 1, 1804, died March 2, 1840. In his 6th year he began to give evidence of those extraordinary powers of computation which afterward excited the wonder of the learned and curious in the United States and Europe. His father decided to exhibit them in public, and accordingly left Vermont with Zerah in the winter of 1810-'11. Passing through Hanover, N. H., Dr. Wheelock, then president of Dartmouth college, offered to take upon himself the whole care and expense of his education, but his father rejected the offer. At Boston, the performances of the boy excited much attention. He was visited by the professors of Harvard university, and by eminent men in all professions, and the public prints were filled with articles concerning his wonderful powers of computation. Questions in multiplication of 4 and 5 places of figures, reduction, rule of three, practice, involution, evolution, compound fractions, and the obtaining of factors even of large numbers, were answered with accuracy and with a rapidity to which the most experienced mathematicians could not attain. At this time he was unable to give any account of the mental processes by which these results were reached; but a few years later he could explain them satisfactorily, and from these explanations it appeared that his processes did not differ materially from those ordinarily adopted in mental computation, except in the extraction of the square root of large numbers, for which he had invented a process which, though practised by eminent mathematicians, could not have been acquired by him at that early age from others. He sought first the number which multiplied into itself would produce the two right-hand figures, and then a number which would come nearest to the square root of the left-hand figure, and putting them together he had the root sought. Among the questions proposed to him at Boston were the following: How many days and hours in 1,811 years? His answer, given in 20 seconds, was, 661,015 days, 15,864,360 hours. How many seconds in 11 years? The answer, given in 4 seconds, was, 346,896,000. When 8 or 9 years of age, he gave answers with a delay of but a few seconds to such questions as these: What is the square of 999,999? Multiply the square twice by 49 and once by 25. (The answer requires 17 figures.) What are the factors of 4,294,967,297? (= $2^{32}+1$). The French mathematicians had announced this as a prime number. Colburn immediately gave 641×6,700,417. What are the factors of 36,803? His answer, given instantly, was: "It has none." What are the factors of 247,483? He replied: "941 and 263, which are the only factors." The rapidity of his mental processes and the power of his memory must have been at this time almost inconceivable. After leaving Boston, Mr. Colburn exhibited his son for money throughout the middle and part of the southern states, and in Jan. 1812, sailed with him for England. After travelling over England, Scotland, and Ireland, they spent 18 months in Paris. Here young Colburn was placed in the *lycée Napoléon*, but was soon removed by his father, who at length, in 1816, returned to England in the deepest penury. The earl of Bristol soon became interested in the boy, and placed him in Westminster school, where he remained till 1819, a period of 3 years. In consequence of his father's refusal to comply with certain arrangements proposed by the earl, he was removed from Westminster, and Mr. Colburn now proposed to his son that he should qualify himself to become an actor. Accordingly, he studied for this profession, and was for a few months under the tuition of Mr. Charles Kemble. His first appearance, however, satisfied both his instructor and himself that he was not adapted for the stage, and accordingly he accepted a situation as assistant in a school, and soon afterward commenced a school of his own. To this he added the performing of some astronomical calculations for Dr. Thomas Young, then secretary of the board of longitude. In 1824, on the death of his father, he was enabled by the kindness of his former patron the earl of Bristol, and other friends, to return to this country. In 1824 he went to Fairfield, N. Y., as assistant teacher of an academy, but not being pleased with his situation, he removed in March following to Burlington, Vt., where he taught French, pursuing his studies at the same time in the university. Toward the end of 1825 he connected himself with the Methodist church, and after 9 years of service as an itinerant preacher in that denomination, he settled at Norwich, Vt., in 1835, where he was soon after appointed professor of languages in Norwich university. In 1833 he published his autobiography. From this it appears that his faculty of computation left him about the time he reached the age of manhood. He was a person of modest and unassuming manners, but aside from his early talent for calculation, gave no evidence of remarkable abilities.

COLBY, Thomas, an English engineer, born at Rochester, Sept. 1, 1784, died in Liverpool, Oct. 9, 1852. He was educated at the royal military academy at Woolwich, and received his first commission as 2d lieutenant of engineers when 17 years old. The next year he became chief personal assistant of Captain Mudge, then superintendent of the ordnance survey. During the 4 following years he passed the summers in making observations at various prominent points, and the winters in preparing the results for publication and superintending the engraving of the ordnance maps. He became identified with the great trigonometrical survey of England through his labors and interest in it, and upon the publication of the 3d volume of the records his name appeared associated with that of Col. Mudge upon the title-page. In 1807 he was raised to the rank of captain. In 1813 it was determined to extend the meridian line into Scotland, and Capt. Colby was placed in charge of the work. He entered with enthusiasm upon the labor, and beside superintending the scientific duties of the survey, and regulating the tasks of his subordinates, took the lead in wading streams and bogs, scaling cliffs, and in walking 30 miles a day for weeks in succession. In 1817 he accompanied Biot, a scientific agent of the French government, on his trip to Shetland, and afterward assisted in connecting the French with the English triangulation by observations across the straits of Dover. Upon the death of Gen. Mudge, in 1820, Colby was appointed his successor as superintendent of the survey and in the board of longitude, was elected a fellow of the royal society, and promoted to the rank of major, and soon after to that of lieutenant-colonel. Having undertaken a thorough survey of Ireland, he received the sanction of the duke of Wellington for raising and training 3 companies of sappers and miners to aid in the work. After a series of experiments on the heating and cooling of metallic rods, he succeeded in so uniting a bar of brass and iron that its extremities always remained the same distance apart in whatever temperature. With this "compensation bar" he measured a base line of 8 miles on the south side of Lough Foyle; and such was the exactitude obtained that the same apparatus has since been used in the remeasurement of the English base, ing a base at the cape of Good Hope, those required for the great arc of the in India. Col. Colby continued his ence of the survey till his promotion 16 the grade of major-general, when by gulations of the service his active connec- with it ended. He had brought English an excellence not before attained, the seconds of latitude and longitude in, and introducing into them ts and features. A more prom- re in his character than even his ent was his command over even the ruin by a careless at- what would have been a geodetic caused him more than a momentary e.

STER, a municipal and parliamen- , market town, and river port of and. on the Colne, 51 miles by the s railway N. E. of London; pop. in 1851, 19,443. It is built on the river, and has 3 bridges, one of cast iron. Among the public are 5 churches, one built before the Edward II. and another mentioned in book, several chapels, a library, of an old castle, of a Benedictine ed under Henry I., and of St. Bo- ry, an interesting structure of the y. There are many charitable and a mechanics' institute, a literary ociation with a museum, a bo- hort ural society, several alms- tals. other charities, and a the- wool manufacture, formerly im- was subsequently superseded by that The latter is now on the decline, and important branch of industry is the for which the town has long been e are iron and brass founderies, shops, rope, sail, and carriage factories, vinegar works, &c. Colchester was nding port in 1808, but the custom warehouses are at Hythe, one of its uated a short distance below, at the navigation on the Colne. The foreign e is inconsiderable, but a large coast- is carried on with London and the rn counties. Number of vessels regis- belonging to the port, Dec. 31, 1856, 14,320; number of vessels entered year 659, tonnage 49,013; clear- , tonnage 16,246.—Colchester is sup- be the *Camalodunum* of the Romans, is probably no town in England remains of that people. Coins, vases, of bronze and pottery, rings, brace- llated pavements, and various other , have been found near it in great pro- The Saxons, uniting the Latin *castra* he name of the river on which it stands, it Colne Ceaster. It was fortified by Ed- Elder, and at the time of the Domes- vey was a place of no small note. It n and occupied by the royalists in 1648 after a memorable siege, and was soon after blockaded by the parliamentarians, to whom the garrison surrendered after 11 weeks' resistance.

COLCHICUM (from Colchis, a country where it abounded), a common name of the *colchicum autumnale* (Linn.), or meadow saffron, a perennial bulbous-rooted plant, growing naturally in the temperate climates of Europe, and cultivated for its medicinal properties. It prefers wet meadows, which it often covers with its bright, purple, crocus-like blossoms. The bulb resembles that of a tulip, and feeds the growing plant, being exhausted and replaced every year. Colchicum closely resembles the autumn crocus, from which it is distinguished by having 6 stamens instead of 3, and 3 styles instead of 1. Its root stocks, seeds, and flowers yield a principle which has been known as a medicine since the time of Hippocrates. It possesses diuretic, purgative, and narcotic properties, and is a favorite remedy for dropsy, humoral asthma, rheumatism, and gout, being for the last almost a specific, rarely failing to allay the pain. The preparation for gout, celebrated under the name of *eau médicinale d'Husson*, is said to be a vinous infusion of colchicum. An infusion may readily be made by saturation of the seeds or powdered root in wine or vinegar. Its action is first felt on the liver, afterward on the kidneys, causing a greater excretion of uric acid, and preventing in some degree the formation of gout stones (urate of soda). As an acid in the stomach renders its action more violent, it is often given with magnesia.

COLCHIS (in part modern Mingrelia), an ancient country of Asia, at the E. extremity of the Euxine, bounded N. by the Caucasus, E. by Iberia and the Moschian mountains, S. by Armenia and Pontus, and W. by the Euxine. Colchis was celebrated in Greek mythology as the destination of the Argonauts, and as the country of Medea and the golden fleece. Its early history is involved in obscurity. Cyrus or his immediate successor seems to have annexed it to the Persian empire; but its inhabitants soon recovered their liberty, and erected their territory into an independent state. During the Mithridatic war it was a tributary of the kingdom of Pontus. On the overthrow of Mithridates it was formed into a Roman province; and after the conclusion of the civil wars, it was incorporated with Pontus, and subjected to the rule of a proconsul. In A. D. 572 the Colchians rose in rebellion, and joined the Persians against the Byzantine empire. Colchis, according to Strabo, abounded in fruit of every kind, and in material for ship-building. It was inhabited by a number of tribes, whose dark complexion, crispy hair, language, and customs indicated, in the opinion of Herodotus, their Egyptian origin. They were famous for the manufacture of linen. Their chief cities were Aea and Dioscurias. The Phasis is the celebrated river of this country.

COLCOTHAR, the ochreous residue after calcining sulphate of iron. When well washed and ground to a fine powder, it constitutes a poor quality of the substance called rouge, which is used for polishing metallic surfaces. It is the *caput mortuum vitrioli* of the retorts, used for the preparation of sulphuric acid.

COLD is simply the absence of heat, and, in a strictly scientific light, should be treated of under the head of heat; but since the facts of cold are as striking as those of heat, it seems proper to speak of them in a separate article. Cold can be apparently concentrated by reflection, as was long since discovered. It appears to dart down from the sky in the same manner as heat from the sun, and to be generated by the solution of certain bodies, as heat is by the solution of others. The natural causes of cold are: 1, the absence of the sun, either by night or in the winter; 2, the diminution of the blanket of the atmosphere as we ascend to high latitudes; 3, evaporation; and 4, radiation through a clear air. The thermometer usually falls about 20° for every mile of ascent in the air, and halos round the sun prove that the clouds are sometimes frozen even in midsummer. Evaporation has been for ages used in the East to cool water for drinking, the evaporation being produced either by putting the water into porous earthen vessels, or setting it on the housetop in shallow pans by night, the water having been previously boiled. Radiation from the earth under a clear sky is a very active cause of cold, producing the dew of summer and the frost of winter. The Hindoos near Calcutta, by a skilful combination of evaporation and radiation, produce frost artificially. In a high plain they make slight excavations in the ground, and fill them with dry cane stalks, which are non-conductors of heat. Over these they place shallow unglazed pans, which they fill at sunset with cool boiled water. If the night is clear, the pans are at sunrise covered with a thin coat of ice, which is collected in baskets and carried to an ice-house to be preserved. Many salts, on being dissolved, cause the water to expand and fall rapidly in temperature. This effect is sometimes very much increased by using snow or pounded ice instead of water. Thus, muriate of lime or caustic potash, mixed with snow, will sink the thermometer far below zero. The evaporation of liquids more volatile than water will produce a great degree of cold. Artificial congelation may be performed on a large scale by placing water and vessels of sulphuric acid in the receiver of an air pump. Instead of sulphuric acid, parched oatmeal may be used for absorbing the vapor of the water.

COLD. See CATARRH.

COLDEN, CADWALLADER, a physician and statesman, born in Dunse, Scotland, Feb. 17, 1688, died at his seat on Long island, Sept. 28, 1776. He studied at Edinburgh, and at the age of 20 emigrated to America, and practised as a physician for some years in Pennsylvania. He then visited England, but returned to Pennsylvania in 1716, and in 1718, at the solicitation of Gov. Hunter, settled in New York. The next year he was appointed the first surveyor-general of the colony, became in 1720 a member of the king's council of the province, and in 1761 was appointed lieutenant-governor of New York, and held the commission during the remainder of his life. He was repeatedly placed at the head of the government by vacancies in the governorship. He published works upon a variety of subjects, medicine, philosophy, and history; his "History of the Five Indian Nations of Canada," of which the 3d edition appeared at London in 1755, is especially worthy of mention; but his favorite pursuit was botany, and he sent to Linnæus several hundred American plants, of which that botanist published descriptions.—CADWALLADER DAVID, grandson of the preceding, born at Springhill, near Flushing, Queens co., L. I., April 4, 1769, died at Jersey City, Feb. 7, 1834. He commenced the practice of law in New York in Jan. 1791, removed his office for a time to Poughkeepsie, and in 1796 resumed his station at the New York bar, where he received the appointment of district attorney, and soon became eminent in the profession, which he practised for several years, intermitted only by a journey to France for the benefit of his health. In 1812 he was colonel of a regiment of volunteers; in 1818 was elected a member of the house of assembly; in the same year succeeded De Witt Clinton as mayor of New York city; in 1822 was elected to congress, and in 1824 to the senate of his own state, from which he withdrew in 1827. He was an active promoter of internal improvements, his name being especially connected with the completion of the Erie and Morris canals. Public education and the reformation of juvenile offenders were also subjects to which he devoted much attention. For many years he was one of the governors of the New York hospital. He wrote a biography of his friend Robert Fulton, which was published by the New York literary and philosophical society.

COLE, a central co. of Mo., bounded N. E. by the Missouri river, S. E. by the Osage, which joins the Missouri at the E. extremity of the co., drained by Moreau creek; area 410 sq. m.; pop. in 1856, 10,138, of whom 858 were slaves; increase in free population since 1850, 3,563; decrease in the number of slaves, 121. It has an undulating surface, and a generally fertile soil, though in some places the land is too rocky for cultivation. Timber, limestone, and buhrstone are abundant. The productions in 1850 were 220,173 bushels of Indian corn, 81,262 of wheat, 43,769 of oats, and 14,126 lbs. of wool. There were 25 grist mills, 5 saw mills, 3 tanneries, 17 churches, 2 newspaper offices, and 725 pupils attending public schools. The seat of justice is Jefferson City, the state capital.

COLE, THOMAS, an American painter, born at Bolton-le-Moor, Lancashire, England, Feb. 1, 1801, died at Catskill, N. Y., Feb. 11, 1848. His father, a small woollen manufacturer, after

reverses in business, emigrated to
in 1819, and established himself in
ville, Ohio. The artist's childhood was
d by striking incidents, but the direction
s could be seen in his employment as
n a print factory, and in making wood
printers. A fine organization and great
for poetry and scenery were his chief
ristics. Two years were spent at Steu-
in the employment of his father, who
small shop, when a portrait painter
Stein passed through the town in the
of his vocation, and Cole, fascinated by
t of his canvas and colors, at once de-
become a painter. With rude ma-
prepared by himself, he attempt-
and miscellaneous subjects, and
aits. In Feb. 1822, he went on
sville, where he purposed to estab-
portrait painter. The western
union did not then afford a very
g field for artists, and both at Clairs-
l at Zanesville, which he subsequently
he not only failed to meet with any
ent, but when he rejoined his family
at Pittsburg, he was in debt for
means of support during his absence.
ed by reverses, he spent the spring
of 1823 in making careful studies
in the vicinity of Pittsburg, and the
him established in Philadelphia as a
e painter. The ensuing winter was one
privation—the "winter of his discon-
he was accustomed to call it. He
all landscapes and comic pieces, and
glad to find regular employment in
chairs, brushes, and Japan ware.
ers, nevertheless, were rapidly develop-
in the works of this period may be seen
of that rich and harmonious style for
e was afterward distinguished. In the
f 1825 he removed to New York, where
ly were now established, and fixed his
n the garret of his father's house in
ich street. The scenery of the Hudson
it all his artistic enthusiasm, and during
the Catskills in the autumn of this year
ed several landscapes, which were ex-
on his return to the city. This was the
point in his career. These pictures at-
the attention and praise of Messrs. Du-
unlap, and Trumbull, and "from that
s Bryant in his funeral oration on
d a fixed reputation, and was num-
the men of whom our country has
be proud." The next 4 years found
he enjoyment of great prosperity; com-
flowed in upon him from all quarters;
s to the White mountains of New Hamp-
Catskills, and Niagara, afforded varied
ing studies. But in the midst of a career
ich few artists would have cared to de-
ole felt that the literal reproduction of
scenery, however profitable it might be,
ot satisfy him; and he determined to
higher sphere of imaginative composition. The fruit of this determination was witnessed in his pictures of the "Garden of Eden" and the "Expulsion," exhibited in 1828. The merit of these works was admitted, but they failed to satisfy the public taste so completely as his simple landscapes. In June, 1829, Cole sailed for Europe, and for 2 years painted in London, where he contributed to several of the annual exhibitions; but from ignorance of the peculiar features of American scenery, or the injustice of hanging committees, his pictures were either regarded as exaggerations of nature, or were so disadvantageously placed that they attracted less attention than their merits deserved. In May, 1831, he visited Florence, and made careful studies in the chief galleries; but amid all the splendors of art and nature with which he was surrounded, he wrote home to his friends that he found no scenery which affected him so powerfully as that he had witnessed in the wildernesses of America. In the succeeding February he visited Rome, and returning to Florence in July, worked with an assiduity which surprised himself, finishing more pictures in 8 months than he had done in double that time before. Among these were views on the Arno, and in the vicinity of Rome and Naples. The influence of Italian scenery and of his studies of old Italian art had meanwhile wrought a change in his style, and the public were disappointed with these works upon their arrival in America, complaining that the artist had lost his first freshness and originality, and that his Italian landscapes were overcharged copies from the old masters. In November, 1832, he returned to New York, and during the ensuing year, while at Catskill, he received from Mr. Luman Reed of New York an order to fill an entire room of his house with pictures. The magnitude of the undertaking required several years of undivided labor, the most of which was devoted to the "Course of Empire," a series of 5 pictures, in which are presented, to use his own words, "an illustration of the history of the human race, as well as an epitome of man—showing the natural changes of landscape, and those effected by man in his progress from barbarism to civilization, to luxury, to the vicious state, or state of destruction, and to the state of ruin or desolation." The series has been called "a great epic poem." Mr. Reed died before the completion of the work, and at the distribution of his estate it was purchased by the New York gallery of fine arts, in whose possession it still remains. For the next few years Cole was engaged upon works of a similar class, chief among which were the "Departure" and the "Return," the "Dream of Arcadia," and the "Voyage of Life;" the last an allegorical series of 4 pictures, representing childhood, youth, manhood, and old age, among the most popular of his works, and which, through the engravings by Smillie, are most extensively known. They are now owned by the Rev. Gorham D. Abbott, of New York. In Nov. 1836, he married Miss Maria

Bartow. The autumn of 1841 found him again in Rome, where he executed a duplicate of his "Voyage of Life," which elicited the praise of Thorwaldsen, who visited his studio repeatedly to see it. In the succeeding spring he travelled over many parts of Sicily, and returned to New York in the summer. An exhibition of his works was opened in Boston and New York in the winter of 1843-'4, for which he painted a number of Sicilian views of great beauty, including a large picture of Mount Etna, from Taormina, executed in 5 days. Thenceforth, until his death, he painted with industry, executing, among other works, the "Cross in the Wilderness," "L'Allegro" and "Il Penseroso," "Home in the Woods," the "Hunter's Return," the "Mountain Ford," &c. The "Cross and the World," a work in 2 parts, dictated by earnest religious conviction, he left unfinished. His life and genius were made the subject of a funeral oration by his friend William C. Bryant. In all the relations of life, Cole's amiability and generosity were engagingly displayed, and to those who could sympathize with his enthusiastic and impressible nature, he especially endeared himself. His life was one of singular purity, and in the latter part of it he manifested a sincere and unostentatious piety. His poetic feeling, so amply illustrated in his works, frequently found expression in rhythmical forms, and his miscellaneous papers in prose and verse, few of which were ever made public, possess considerable literary merit.

COLEBROOKE, Henry Thomas, an English orientalist, born in London, June 15, 1765, died there, March 18, 1837. He was sent to India at an early age as secretary of the East India company. After the formation of the college of Fort William, he was appointed to the professorship of the Sanscrit language, and afterward he officiated as chief justice, as member of the provisional council of Bengal, and in various other official capacities in British India. He published a digest of the Hindoo laws, from the original Sanscrit (Calcutta, 1797, 3 vols. 8vo.), which had been compiled under the superintendence of Sir William Jones. Many of the most valuable treatises prepared by Mr. Colebrooke are to be found in the volumes of the "Asiatic Researches." He has especially enriched the history of mathematics with his translations from the mathematical works of the Hindoos, and the department of grammar by his translation of a Sanscrit grammar into the English language. He thoroughly examined and discussed in various papers the different philosophical systems of the Hindoos in all their ramifications.

COLEMAN, William, an American journalist, born in Boston, Feb. 14, 1766, died in New York, July 13, 1829. He was educated for the bar, and commenced practice in Greenfield, Mass. During Shays's rebellion he took up arms against the insurgents. In 1794 he removed to New York, where for a short time he was a partner of Aaron Burr in the practice of law. Subsequently he was appointed reporter of the supreme court of the state of New York, a position which he lost after the defeat of the federal party in 1800. In 1801 Hamilton and other leading federalists conceived the idea of establishing a daily paper in the city of New York, and Coleman, who had always been intimately identified with the party, was selected to conduct it. The new organ, under the name of the "Evening Post," appeared Nov. 16, 1801, and for nearly 29 years Coleman remained its sole editor. His connection with it ceased only with his death. His attachment to federal principles never wavered, and even after the party became extinct he continued to be its warm defender. His position brought him into intimate relations with some of the most eminent men of his time. He enjoyed the reputation of an able, honest, and fearless man.

COLERIDGE, Derwent, the youngest son of Samuel Taylor Coleridge, a clergyman of the church of England, and principal of St. Mark's college, Chelsea, born at Keswick, Sept. 14, 1800. After passing his boyhood at a small school near Ambleside, he was for 2 years employed as a private tutor, at the expiration of which he entered St. John's college, Cambridge. He there became one of the band of young men who were contributing to "Knight's Quarterly Magazine," and wrote light sketches under the signature of "Davenant Cecil." He was ordained in 1826, and is a prebendary of St. Paul's cathedral, but has been chiefly occupied since he left the university as a teacher in various educational establishments. He is the author of a graceful and touching memoir of his brother Hartley, the publication of whose "Poetical Remains" and prose writings he superintended. Upon the death of his accomplished sister Sara, he succeeded her as editor of the works of his father, and performed this labor of love with admirable judgment. He has also undertaken a life of his father and a collection of his correspondence. A memoir of the poet Praed is also announced from his pen, and he is the author of some theological and educational publications.

COLERIDGE, Hartley, the eldest son of Samuel Taylor Coleridge, born at Clevedon, near Bristol, Sept. 19, 1796, died at Rydal Water, Jan. 6, 1849. His birth was commemorated by his father in 2 sonnets, and his early peculiarities were described and his wayward career almost prophesied in an exquisite poem addressed to him when 6 years old by Wordsworth. He was reared in the lake district in the north of England, and after a visit to London in 1[illegible], he and his brother Derwent became day scholars of a clergyman at Ambleside. Yet the best part of his education was by intercourse with the friends of his father; and he speaks of himself as having been formed by the living voice of Coleridge, Southey, Wordsworth, Lloyd, Wilson, and De Quincey. In his school days he showed both imaginative and conversational powers by weaving long and wild stories, the recital of which would occupy him and his listeners night after night for months. In 1815, having become a student at Merton college, Oxford, his accomplishments and brilliant conversation gained him numerous invitations to social gatherings, and he acquired habits of wine-drinking over which he afterward had little control. He passed a highly honorable examination for his degree in 1818, and obtained a fellowship at Oriel college; but before the close of his probationary year, his intemperance caused the forfeiture of this position. The punishment fell heavily upon his sensitive temperament, and in his despondency and morbid consciousness of shame he resisted less and less the weakness which had caused the overthrow of his fortunes. He left Oxford and resided for 2 years in London, contributing his first sonnets to the "London Magazine." A scheme to receive pupils at Ambleside failed, and proved that he was unfit for any future exertion of the kind; yet he remained till his death in the lake district, excepting a short residence at Leeds, beloved by all his neighbors and watched over by the kind family in whose house he lived. His father expressed in his will great solicitude to secure to him the tranquillity necessary to the exercise of his literary talents, and by a bequest provided him with "the continued means of a home." Wordsworth was his near neighbor, and the famed poet was most attentive to the child-like man whose life he had traced from the cradle. Hartley was a diligent reader, a deep thinker, and an easy writer. His verse and his prose are alike exquisite. His sonnets are among the finest in the English language, and his volume of biography, the "Lives of Northern Worthies," is written in a pleasant, vivacious style, with a vein of fine philosophy beneath. During the latter years of his life he wrote a "Life of Massinger," and many short poems. His grave is in the Grasmere church-yard, by the side of that of Wordsworth.

COLERIDGE, Henry Nelson, an English lawyer and author, son of Col. Coleridge, a brother of the poet, born in 1800, died Jan. 26, 1843. He was first a scholar at Eton, and became in due course a scholar and subsequently a fellow of King's college, Cambridge, where he received the degree of A. B. in 1823. While in college he won several prizes for Greek and Latin odes, was recognized as a man of superior talent and scholarship, and was associated with W. M. Praed, T. B. Macaulay, J. Moultrie, and others of his university, in writing for "Knight's Quarterly Magazine." His papers, which were under the signature of "Joseph Haller," treated chiefly questions of English history, and were distinguished for their soundness of opinion and breadth of view. On account of ill health in 1825 he accompanied his uncle, the bishop of Barbados, on a voyage to that island, and on his return published a lively and very successful narrative of his experiences, under the title of "Six Months in the West Indies." He was called to the bar in 1826, and attained a good practice in the court of chancery, but devoted his leisure to an assiduous study of literature, and to the society and conversation of his uncle, S. T. Coleridge, whose daughter he married. In 1830 he published an "Introduction to the Study of the Greek Classic Poets." A more important task devolved upon him as literary executor of his uncle, and under his care the volumes of the "Table Talk," "Literary Remains," and "Confessions of an Inquiring Spirit," were given to the public. He endured a painful illness during the latter years of his life, and was often prostrated for months, but suffered with fortitude and with a cheerful mind.

COLERIDGE, Sir John Taylor, nephew of Samuel Taylor Coleridge, an English judge, born at Tiverton, Devon, in 1790. He received his education at the university of Oxford, where he distinguished himself by brilliant scholarship, and in 1819 was called to the bar. For many years he went the western circuit, and after an honorable professional career was appointed a justice of the king's bench in 1835, during the brief tory administration of Sir Robert Peel. For 23 years he occupied this position, retiring in June, 1858, greatly to the regret of the bar and the public. On this occasion, in the presence of a full court, the attorney-general addressed him, in behalf of his associates at the bar, in an impressive speech, to which Justice Coleridge feelingly replied. His remarks are memorable as containing advice to the younger members of the profession directly in conflict with the dogma of Lord Brougham, that the lawyer should know nobody but his client and no interests but his client's interests. Justice Coleridge has also a considerable reputation as a man of letters. He edited the "Quarterly Review" between the death of Gifford and the appointment of Lockhart, and in 1825 published an edition of Blackstone's "Commentaries," with notes.

COLERIDGE, Samuel Taylor, an English poet and philosopher, born at Ottery St. Mary, Devonshire, Oct. 21, 1772, died at Highgate, London, July 25, 1834. He was the youngest child of a learned and singularly amiable clergyman, and became an orphan at the age of 9 years. By the kindness of a friend he was presented to Christ's hospital, in London, where he received the principal part of his education, and began a life-long intimacy with Charles Lamb, who was one of his schoolfellows. His juvenile character prefigured his future career. He was a playless day-dreamer, solitary, and uninterested in the ordinary amusements of childhood; yet he made great advances in classical knowledge, and was early distinguished by rare powers of discourse. Charles Lamb speaks of him as "the inspired charity boy, to whom the casual passer through the cloisters listened entranced with admiration, as he unfolded in deep and sweet intonations the mysteries of Iamblichus or Plotinus, or recited the Greek of Homer or Pindar." Before his 15th year he had read through a London circulating library, catalogues, folios, and all, and had bewildered himself in metaphysical studies and in meditating on the problems of theology. So great was his pleasure in abstract speculations that he describes himself as having lost all interest in particular facts, in history or romance, and even poetry seemed insipid to him. Without ambition or worldly wisdom, he at one time purposed apprenticing himself to a shoemaker whose shop was near the school. In his 17th year, the sonnets of Mr. Bowles, 20 in number, were made known and presented to him, and such was his admiration of them that he used frequently to transcribe them for presents to the friends for whom he had most regard. These simple poems recalled his idealizing mind to a juster estimate and love of realities; and having in 1791 become deputy Grecian or head scholar at Christ's hospital, he obtained a presentation thence to Jesus college, Cambridge. He remained in the university but two years, during which he paid no attention to mathematics, but gained the prize for a Greek ode. At the outbreak of the French revolution, he became obnoxious to his superiors from his acceptance of the revolutionary principles. With an enthusiastic and hopeful view of human nature, and an impetuous zeal in the cause of freedom, he hailed the early events of that epoch of European history as the promise of a new era. His feelings at this period form the theme of one of his odes, entitled "France," and eulogized by Shelley as the finest ode of modern times. Suddenly leaving Cambridge in the midst of his university career, he wandered about for a day or two in London, gave his last penny to a beggar, and enlisted in a regiment of cavalry under the assumed name of Comberback. The poet, however, made but an awkward dragoon, and wrote letters for his comrades while they attended to his horse and accoutrements. After 4 months' service, a Latin sentence which he had inscribed under his saddle revealed his scholarship, and the captain of his troop, having succeeded in learning his real history, restored him to his friends. He now became associated at Bristol with two other poetical enthusiasts, Southey, a student from Oxford, and Lovell, a young Quaker. Southey, like Coleridge, was an ardent republican and Unitarian, and for his faith had just forfeited the honors of Oxford. These three conceived a splendid scheme of emigration. They determined to found amid the wilds of the Susquehanna a commonwealth which was to be free from the evils and turmoils which then agitated the world, in which a community of goods was to be enjoyed, and from which selfishness was to be proscribed. But this scheme of pantisocracy, as it was termed, failed from want of money and from other practical difficulties; and the three pantisocratists, having married in 1795 three sisters, the Misses Fricker of Bristol, began to turn their attention to the reformation of England. Coleridge had already collected a small volume of his juvenile poems, for which he had received 30 guineas from a benevolent and appreciative publisher, Mr. Joseph Cottle, and he now entered upon an undertaking from which he expected great results, namely, the establishment of a periodical in prose and verse, to be entitled the "Watchman," and to advocate liberal opinions. He himself canvassed the northern manufacturing towns for subscribers, preaching wherever he stayed on Sunday in Unitarian chapels, and returned with a subscription list full of promise. Yet the periodical, owing partly to a want of punctuality in its issue, partly to its learned philosophical contents, and partly to the fact that its opinions were not those which its supporters had expected, was dropped at the 10th number with a loss. In 1796 Coleridge took a cottage at Nether Stowey, in Somersetshire, where his means were increased by receiving into his family a Cambridge friend and poet, Charles Lloyd, the son of a wealthy banker, who, merely from love and admiration, had proposed living with him. He published in 1796, in connection with Charles Lamb, a small volume of poems, the greater number of his own contributions to which had been written at earlier periods; and to a second edition in the next year verses were added by Lloyd. Mr. Wordsworth having moved to Allfoxden, about 2 miles from Stowey, the kindred feelings of the two poets united them in the closest friendship. They rambled together over the Somerset hills, discussing the principles of poetry and planning their famous lyrical ballads. It was in this happiest period of Coleridge's life that he wrote his most beautiful poetry, the first part of "Christabel," the "Ancient Mariner," and the "Ode to the Departing Year;" and a mutual resolution of the poets to write a play produced his tragedy of "Remorse." He received in 1798 an invitation to become a Unitarian minister in Shrewsbury, and preached his probation sermon there, the great impression produced by which has been recorded by Hazlitt, who was one of his audience; but he did not preach again. The munificence of his friend Mr. Wedgwood enabled him to visit Germany, and immediately after the publication of the "Lyrical Ballads," he and Mr. Wordsworth set out upon the journey together. He attended the lectures of Blumenbach and Eichhorn at Göttingen, formed an acquaintance with Tieck, and obtained a more or less thorough acquaintance with the German literature and philosophy. At no other period of his life did he work so industriously as during his residence in Germany, and on his return in 1800 he brought back, in addition to his mental acquisitions, a large collection of materials for a life of Lessing. He passed 6 months in London engaged in translating Schiller's "Wallenstein," and in writing for the "Morning Post," after which he joined Southey, who had settled at Keswick, amid the lakes and mountains of the north of England, in the neighborhood of Wordsworth, who resided at Grasmere. His opinions had now changed; the republican had become a royalist, the Unitarian a devoted champion of the blished church. In 1804 he went to Malta, ping to improve his health, and acted as secetary to Sir Alexander Ball, the governor. He eturned in 1806 by way of Sicily and Italy, his ealth not improved; nor was improvement to e expected, since he went to Malta an opiumater, and returned with the habit growing upon im. His nominal residence from this time till 810 was at Keswick, but his absences were requent, and his returns, according to Southey, nore incalculable than those of a comet. He vas often with Wordsworth at Grasmere, was ccasionally in London lecturing, and during he year 1809 was engaged in writing "The riend," his second periodical, which extended o 27 numbers. In 1810 he left the lakes for ondon, and resided for a time with Mr. Basil ntagu. He then made his home for 3 or 4 with Mr. Morgan at Hammersmith, and 16 placed himself under the care of Mr. lman, a surgeon at Highgate, in the hope that e might be broken of his fatal propensity to . In Mr. Gillman he found the kindest iends, and lived in his house during the last years of his life. It was here that he pubed the wild and wondrous tale of "Christa-," which had been written long before; his ond tragedy, entitled "Zapoyla," founded on "Winter's Tale;" and several prose works, principal of which were his "Statesman's nual," two "Lay Sermons," "Biographia ria," and "Aids to Reflection." Here, too, e was visited by numerous friends and adirers who came to listen to his marvellous onversation. The published volumes of his 'Table Talk" can give but a faint idea of those xtraordinary monologues which attracted many houghtful young men to the feet of the sage f Highgate. With an infirm will, he could ot overcome the irksomeness of writing out is dreamy idealities and preternatural subtleies of thought, but the gentle excitement of a l circle loosed his powers, and he uttered ghtest fancies and most comprehensive speations without impediment. His discourse can e judged now only by the effect which it is reorded to have produced upon the listeners, and n happiest moods it must have been magnilo , and most impressive. Not since Pytha- does an equal charm seem to have graced ech of any man.—The poems of Coleridge his manifold powers. They comprise , songs of love, strains of patriotism, and shadowy tales of superstition; they are narked sometimes by a mysterious and wondrous imaginative witchery, sometimes by phiosophical thought and retrospection; and their tyle is according to the subject, either most nelodious and flowing, or severe and stately. veral of them are fragmentary, but have no r imperfection, all that there is of them being less. The "Rime of the Ancient Mariner" the unfinished story of "Christabel" are bably unsurpassed in any language in vivid magery, solemn intensity of feeling, and skilful modulation of verse. No other poems could so justly be termed purely, absolutely imaginative. The musical versification of "Christabel" delighted both Byron and Scott, and was imitated by them both; it was the acknowledged model of the metre of the "Lay of the Last Ministrel." Coleridge's translation of Schiller's "Wallenstein" is remarkable as being perhaps the only version that was ever esteemed superior to the original. His tragedy of "Remorse" was brought out with great success at Drury Lane in 1813, but exhibits scenery and sentiment rather than character, and has not since been revived.—The prose writings of Coleridge embrace theology, metaphysical and political philosophy, and literary criticism. His philosophical, more than his poetical works, are marked by a splendid incompleteness, and much as they have served to stimulate and direct the minds of others, they do not contain a fully developed system. He was born a Platonist, and he could not rest content, with Locke, to seek all knowledge in phenomena, or with Paley, to seek all good in happiness. His familiarity with the philosophy of Germany, which he first introduced to the notice of British scholars, supplied to him more spiritual theories. Above the understanding which generalizes from the data of perception, and gathers laws from experience, he enthroned the reason which seizes immediately upon universal and necessary truths, and whose intuitions are more certain than sensible phenomena, and more authoritative than the prompting to happiness. It is the clearness and earnestness with which Coleridge has illustrated this truth that has given to his name its philosophical significance, and made him the prompter of many English and American divines and thinkers. He also defended enthusiastically but not clearly the self-determining power of the human will. —Coleridge's critical pieces need only completeness to have been alone sufficient to establish his fame. His remarks upon numerous authors and passages scattered upon the margins of books were such as to make his friends always eager to lend him their books for his reading. His review of Mr. Wordsworth's poetry, in the 2d volume of the "Biographia Literaria," is one of the most philosophical pieces of criticism in the language; and his lectures upon Shakespeare retain their place among the many important works on that author which have more recently been published. The prose style of Coleridge is not always marked by that immaculate taste which distinguishes his poems, but is occasionally disfigured by obscurities and prolixities.—More important than the works which he executed are those which he planned. The life of Lessing, the dream of his German residence, was never really commenced. It was one of his later long-cherished schemes to compose a work of colossal proportions which should embrace the whole range of spiritual philosophy, show Christianity to be the only revelation of permanent and universal validity, unite the insulated fragments of truth, and reduce all knowledge into harmony. He also conceived an epic poem on the destruction of Jerusalem, a subject which would interest all Christendom as the siege of Troy interested Greece. His glowing conceptions, and his ambition to achieve some great work, joined to that infirmity of will which made him recoil from effort, he himself has depicted with great pathos in a few lines which he addressed to Wordsworth. His life ebbed away in the contemplation of mighty projects, and the legacy which he left to mankind, though a valuable one, was but a fragment from the mine of his genius.—The unpublished writings of Coleridge were carefully edited after his death by his nephew Henry Nelson, his daughter Sara, and his son Derwent. All of his works have been frequently republished separately, and a complete edition of them, with a much needed life of the poet, is expected in England from Mr. Derwent Coleridge. A collected edition, in 7 volumes, with an introductory essay upon his philosophical and theological opinions, edited by Professor Shedd, appeared in New York in 1853-'54. The best illustrations of his life are found in the "Personal Recollections" of Joseph Cottle, and in the biographies and letters of his associates, Charles Lamb, Wordsworth, and Southey. The "Fragmentary Remains of Sir Humphry Davy," edited by his brother, John Davy (London, 1858), contains several interesting letters by Coleridge.

COLERIDGE, Sara, the only daughter of Samuel Taylor Coleridge, born at Keswick in 1803, died May 3, 1852. She is described as the inheritor of her father's genius, and her life until her marriage was passed at Keswick in diligent study, in mountain rambles with Wordsworth, and in lending literary assistance to Southey. At the age of 19 she made an admirable English translation of Dobrizhoffer's account of the Abipones, an equestrian people of Paraguay. In 1829 she married her cousin Henry Nelson Coleridge, and devoting herself to domestic duties, her next publication was entitled "Pretty Lessons for Little Children," which was primarily designed for her own children, but speedily passed through several editions. On the death of her father, her husband was appointed his literary executor, and she assisted in editing his multiform works, and after the death of her husband took upon herself the whole of the important duty. She edited alone the "Aids to Reflection," "Notes on Shakespeare and the Dramatists," and "Essays on his own Times;" and the elaborate discourses on weighty matters which she affixed to these works manifest both her erudition and her critical and logical ability. The beautiful romance of "Phantasmion" reveals also her imaginative faculty, and, though not a poem, was pronounced by the "Quarterly Review" to be poetry from beginning to end. Yet in the annotations upon the writings of her father will be found the best evidence of her rare gifts and acquirements, and the chief foundation of her literary reputation. A memoir of her life, by Henry Reed, appeared in the "Literary World," of New York, for Aug. 21, 1852.

COLES, or Hos, an aboriginal race of N. Orissa, Hindostan, little advanced in civilization. They are said to be truthful, honest, obliging, hospitable, and light-hearted; but, on the other hand, passionate, revengeful, addicted to suicide, and in their contests with the British they have never been remarkable for bravery.

COLESBERG, an elevated, level district of Cape Colony, South Africa, well adapted for rearing live stock. Its N. boundary is formed by Orange river. Area, 11,654 sq. m.; pop. 8,828. In the village of Colesberg, in this district, are Dutch and Wesleyan churches. Pop. of the village, about 500.

COLET, John, an English divine, born in London in 1466, died there, Sept. 16, 1519. He completed his education at Oxford, and afterward visited France and Italy. On returning to England he was ordained, and then, retiring to Oxford, delivered free lectures on the epistles of St. Paul. He was successively appointed rector of Dennington in Suffolk, prebendary of York, canon of St. Martin's-le-Grand, London, and dean of St. Paul's. Shortly before his promotion to the last-named office, he obtained his degree of D.D. He was one of the first of the Anglican clergy who introduced the custom of expounding the Scriptures on Sundays. This innovation caused Dr. Fitzjames to denounce him as a heretic, but the archbishop dismissed the complaint. In 1508 the dean conceived the idea of founding and endowing a school in which the children of the poor should receive a free education. This institution was completed in 1512, and, from its connection with the cathedral, was denominated the St. Paul's school. He was acquainted with Budæus and Erasmus, and wrote various philological and devotional works, the most important of which are his "Accidence," "Syntax," "Daily Devotions," and "Monitions to a Godly Life."

COLET, Louise, a French poetess, whose maiden name was Révoil, born at Aix, in Provence, Aug. 15, 1815, married Hippolyte Colet, professor of the *conservatoire de musique* at Paris, who died in 1851, translated Shakespeare's "Tempest" into French, and wrote a poem entitled *L'Acropole d'Athènes*, which was crowned by the French academy, *Le musée de Versailles*, *Le monument de Molière*, and many others. Of her *Poëme de la femme*, which is to consist of 6 parts, the 2 first only have appeared. Her prose writings comprise novels, tales, and plays. Among those who were not favorably impressed by her genius was Alphonse Karr, and, incensed at his criticisms, she attempted to stab him with a knife. The critic afterward published a facetious account of this attempt.

COLIC, in its strictest sense, a severe and moving pain in the colon, or large intestine; but pains having their seat in the small intestines, and in any of the abdominal viscera, are now included under this term. Bilious colic is

d to excessive secretion or acridity of
flatulent colic to the accumulation of
l gases; painters' colic to the poisonous
lyzing influences of lead; hepatic colic
of gall-stones along the biliary
these, there are menstrual colic,
accompanying the menstrual dis-
phritic colic, in inflammation of the
during the passage of calculi along
: verminous colic, due to the irrita-
in the intestines; uterine colic,
in the uterus; nervous colic,
a spasmodic contraction of any
alimentary canal, from the stomach
n; so that colic, or shifting abdomi-
a symptom of a great variety of dis-
itions, both functional and organic.
generally understood by colic is
ere), having its seat in the small
which seem to be variously rolled
d, accompanied by very severe pain,
and constipation; it may sometimes
ory, but is usually spasmodic, and
influence of sudden cold, improper
rink, or intense mental and moral ex-
The treatment is as various as the
ng of opiates to relieve pain,
to arrest irregular nervous ac-
ting cathartics and enemata, hot
lications to the abdomen, carmina-
move flatulence, the inhalation of
the passage of biliary and renal
iphlogistic and demulcent reme-
accompanied by any inflammatory
Children are particularly subject to
d by acidity in the intestines and
ulation of gases, but are easily re-
familiar domestic remedies. Lead
equire further mention in its proper
per colic resembles it, except that it
accompanied by diarrhœa, instead
iate constipation which is so char-
the disease produced by lead. Colic
ch is generally a nervous disease,
nulating antispasmodics and tonics.

G, GASPARD DE, leader of the French
, and principal victim of the St. Bar-
acre, born Feb. 16, 1517, at Châ-
r-Loing, murdered in Paris, Aug. 24,
He was introduced in 1539 to Francis I.
le, the great constable Anne of Mont-
, was knighted for his services in the
Cérisolles, and appointed to the com-
an infantry regiment. He soon ac-
he reputation of being one of the best
the army. His stern sense of duty
able bravery contrasted in a strik-
with the gay and frivolous disposi-
e young nobles of his time. On the
of Henry II. he was promoted to the
colonel-general of the French infantry.
o his skilful efforts, the strictest disci-
on prevailed among soldiers who had
re been notorious for insubordination.
s he established became the basis of the
military code, and he may be regarded as one of the founders of the French system of infantry. Soon afterward, he received the commission of admiral, which office, being more of a military than naval character, placed him in power next to the constable. His colonel-generalcy he resigned to his brother Dandelot. He accompanied King Henry II. in his conquest of the "three bishoprics," Metz, Toul, and Verdun, and subsequently contributed to the victory won at Renty by the French over the army of Charles V. Appointed governor of Picardy, he displayed remarkable intrepidity in conducting the defence of St. Quentin against the Spanish troops. Although all hopes of holding the town were gone, Coligni refused to surrender, and was taken prisoner (1557) while fighting desperately at the head of a few soldiers, and sent to the castle of Sluis, where he was confined for several months, but finally recovered his liberty on paying a ransom of 50,000 crowns. With the genius of a warrior he combined the fervor of a religious reformer. He was a devoted Calvinist, having for years meditated upon the opinions promulgated by the great French reformer; and although not yet openly avowing the new creed, he had proved an active supporter of the French Protestants. He now proposed to secure for them a place of refuge, and sent several expeditions to America, one of which, intrusted in 1562 to John Ribault of Dieppe, erected Fort Charles on the coast of Carolina, but soon abandoned it and returned to France; another in 1564, placed under the command of Laudonnière, settled near the mouth of St. John's river, Florida, but they were expelled and nearly exterminated by the Spaniards, who claimed the ownership of the country. After the death of Henry II. (1559), Coligni came boldly forward as the leader of the Huguenots, and his attempts to secure religious liberty for his followers having been defeated by the intrigues of the duke of Guise and of Catharine de' Medici, he reluctantly took up arms in 1562. At the battle of Dreux, fought in that year, the prince of Condé was taken prisoner, and after this prince's death at the battle of Jarnac (1569), Coligni gathered the remains of the Protestant army, and was soon able to confront again the Catholics at Moncontour. In this last encounter he was defeated; but although severely wounded, and unable to ride on horseback, he led the retreat from his litter, preserving such good order and presenting such an unbroken front to the enemy, that the Catholics themselves became favorable to a termination of the war, and peace was actually made a few months afterward. It has been very justly said of Coligni, that he was never more to be dreaded than after a defeat, and he has been called the "general of retreats." After the treaty of St. Germain in Aug. 1570, Coligni reappeared at the court, where he submitted to Charles IX. plans for the improvement of his government and the direction of his foreign policy. Charles seemed to receive his advice with great deference, but he

was surrounded by courtiers who would not tolerate the influence of a Huguenot, and the great admiral was destined to be the first victim of the massacre of St. Bartholomew. Two days previous to the consummation of this tragedy, Coligni had been shot at from a house belonging to the Guise family by a man commonly called the king's assassin. Charles IX. called on the wounded warrior, seemed to sympathize with his misfortune, and swore that the murderer should not escape punishment; but his mother soon diverted his attention into other channels, and the admiral was abandoned to the same fate which overcame all the other Huguenots. A band of murderers led by Behme, a German in the service of the duke of Guise, invaded the admiral's house; on entering his room, they were at first subdued by the prestige of his presence; but Behme, soon recovering his presence of mind, stabbed him in the stomach with a boar spear and threw the body into the court, where the duke himself was in waiting. This young prince had always, but unjustly, accused Coligni of having been an accomplice in his father's murder, and could only be satisfied by his death. The head of the unfortunate hero was brought to Catharine, who had it embalmed and sent to Rome. His lacerated remains were dragged through the streets, and at last placed on the gallows at Montfaucon, where it is said Charles IX. went to look at them, accompanied by his courtiers. Some faithful servants of Coligni carried them away during the night, at the peril of their lives, and his cousin Montmorency had them secretly buried in Chantilly. In 1786 Montesquieu transferred them to his estate of Maupertuis, where he dedicated a chapel and a monument in honor of the admiral. After the revolution, the latter was removed to the *musée des monuments Français*. Coligni left memoirs of his own time, but they were destroyed. The only work of his which has been preserved is his *Relation du siége de St. Quentin*. An essay entitled *Souvenirs historiques sur l'amiral Coligni, sa famille et sa seigneurie de Châtillon-sur-Loing*, was prepared in 1858 by M. Becquerel, a member of the French academy, and read before that body.

COLIMA, a small territory of Mexico, extending about 80 m. along the Pacific coast, between the states of Guadalajara and Valladolid; area, about 2,918 sq. m.; pop. 61,243. It is chiefly noted for its volcano, bearing the same name, that forms the western extremity of the volcanic chain which traverses Mexico from east to west. It frequently throws out ashes and smoke, but no eruptions of lava are known to have come from it. Little is known of the volcano of Colima beyond the few facts obtained by Don Manuel Abad, vicar of the bishopric of Michoacan, who estimates its elevation at 2,800 metres above the level of the sea (9,240 feet). From the city of Colima the volcano rises in all its grandeur. It is never entirely covered with snow. Abad says that on one occasion it was covered with snow for two-thirds of its height, and that it remained so covered for 2 months on its northern declivity. As snow sometimes falls in the western part of Mexico under the latitude of 18° or 20° at 1,600 metres (5,248 feet) of elevation, Humboldt was led to assign an elevation of 3,000 metres (10,498 feet) to the volcano, which is probably nearer the truth than the estimate of Father Abad. Two well defined and lofty peaks, one of which is the volcano, are seen by ships passing along the coast, although not less than 40 miles distant, and serve as important landmarks for them. The climate of this territory is very hot, yet with a fertile soil it has valuable products. During the first 5 years of the recent settlement of California a considerable trade was carried on between Colima, through its port, and San Francisco.—COLIMA, the principal city and capital of the above-described territory, is distant 600 miles from Mexico; pop. 31,774, comprising about half the population of the territory. It was founded by Cortes (between the years 1522 and 1524), after his return from Spain, and is a handsomely built city. The town of Zacatula, 100 miles to the south on the coast, was also founded by Cortes. The port of Colima is Manzanillo, through which a considerable commerce is carried on with France, the imports being wines, silks, fine cloths, linens, &c.; there is also some trade with San Francisco, but none with the commercial cities of the United States on the Atlantic.

COLLAMER, JACOB, a U. S. senator from Vermont, born at Troy, N. Y., in 1792, a son of Samuel Collamer, who was a native of Scituate, Mass., and a soldier of the revolution. In childhood he removed to Burlington, Vt., and was graduated at the university of Vermont in 1810. He studied law at St. Alban's, and was admitted to practice at that place in 1812, after which he made the frontier campaign as a lieutenant of artillery in the detached militia in the U. S. service. He accomplished his course of preparatory, collegiate, and professional studies without any other pecuniary means than such as his own industry supplied. Until 1833 he practised law in Washington, Orange, and Windsor counties, commencing at Barre. In 1821, '22, '27, and '28, he represented the town of Royalton in the general assembly. In 1833 he was elected an associate justice of the supreme court of Vermont, and was continued on the bench until 1842, when he declined a reëlection. In 1843 he was chosen to represent the 2d district in congress, was reëlected in 1844 and 1846, but in 1848 declined to be again a candidate. In Oct. 1848, the dominant party of Vermont formally recommended him through a legislative caucus for a cabinet appointment, and on March 7, 1849, he was appointed postmaster-general by President Taylor, in which office he continued until succeeded by the Hon. Nathan K. Hall, July 20, 1850. On Nov. 8, 1850, he was elected judge of the 2d circuit of the supreme court, and was annually reëlected to

office until Oct. 14, 1854, when he
ed U. S. senator. The degree of LL.D.
nferred upon him by the university of
nt in 1849, and in 1857 by Dartmouth
. He resides at Woodstock, Windsor co.

LÉ, Charles, a French dramatist and
riter, born in Paris in 1709, died Nov. 3,
He was patronized by the duke of Or-
he son of the regent, who appointed him
der and private secretary. During 20
e wrote plays for the private theatre of
. His songs, however, have more merit
plays, and place him on a par with
and Béranger, who acknowledge him
. The songs have been collected
the plays published under the
héâtre de société.

LE, Raffaellino dal, an Italian paint-
16th century, studied under Raphael
ard under Giulio Romano, and was
nt of both these artists. In his man-
ting he bore considerable resem-
Raphael; so much so, that some of
ks have been supposed to have been exe-
y that great master. No less eminent
desty than for his artistic ability, he
t to work for a time under the direc-
sari, though the latter was inferior to
inter. Among his paintings may be
a picture of the "Resurrection," in
of St. Rocco at San Sepolcro; an
ion" in the church of the Conventuali
di ello; a "Nativity," and two pic-
ing scenes in the life of St. Bene-
in fresco, in the chapel of the
ks at Gubbio. Raffaellino is con-
Lanzi as one of the best masters of
ool of Raphael.

LECT (Lat. *colligere*, to collect), in lit-
a brief and comprehensive prayer, named
from its use in the public assembly, or
many petitions are contained in it in a
mmary. Many of the collects found in
man missal and in the prayer books of
rotestant communions are of undisputed
ty, and are attributed to saints and wri-
the early centuries of the church.

LEGE (Lat. *collegium*, an association),
rimary and most general meaning, the
of several persons (*collegæ*, colleagues),
o powers, privileges, and customs, in
e for a common end. Thus, in Roman
y, colleges consisted of at least 3 per-
rming a corporation for religious, polit-
ustrial purposes. The 4 principal col-
priests were the *collegium pontificum*,
rum, *C. septemvirorum* or *epulonum*,
quindecimvirorum. These were insti-
y the earliest kings, and beside them
were many designed for the service of
divinities, or at a later period for the
p of the emperors after their apotheosis.
last class the *C. Augustalium* and *C.*
lium were examples. Among the Ro-
olitical colleges were the *C. Capitolino-*
hich presided over the Capitoline games.

the *C. tribunorum plebis*, which protected the plebeians from the abuse of patrician magistrates, and the *C. quæstorum*, which managed the public revenues. There were also from the time of Numa or Servius Tullius colleges of artificers, carpenters, butchers, bakers, locksmiths, potters, and finally of persons engaged in nearly every other branch of industry. Their original design was either to bring the old and new citizens into closer union, or, according to Plutarch, to prevent the danger of any general conspiracy, by organizing separate assemblies, festivals, and finances for different portions of the citizens. During the latter period of the republic these colleges increased in number, and became intriguing and violent parties in the comitia, so that the senate ordered the dissolution of all those newly formed. They were revived during the civil wars, and suppressed by Cæsar and again by Augustus, being regarded as centres of conspiracy. They were encouraged and patronized in the Byzantine empire, in return for which they furnished to the government the products needed for the public services.—Among more recent applications of the term are the *C. tenuiorum*, a mediæval union of poor men who engaged to procure for each other proper burial; the sacred college, or college of cardinals, which assembles in conclave and elects the pope; the colleges or courts of admiralty, having maritime jurisdiction at Amsterdam, Rotterdam, Hoorn, and other seaports of Holland; the colleges of the Arminians, or their assemblies held twice each week on Sunday and Friday; the 3 colleges of electors or their deputies, of princes or their deputies, and of the deputies of imperial cities, which composed the Germanic diet prior to the dissolution of the German empire in 1806; the college of electors of president and vice-president in the United States, chosen by the people once in 4 years for that purpose only; the college of justice, or supreme civil court, of Scotland, embracing the advocates and clerks as well as the lords of council and session; the college of heralds in England, incorporated by charter of Richard III. with various privileges, and subordinate to the earl marshal of England, who held his court of chivalry in its hall assisted by its members; the college of general superintendence in Russia, or that department of government which has direction of all benevolent institutions, schools, and houses for the sick and poor; the London college of civilians, or doctors' commons, founded by Dr. Harvey, the members of which live in a collegiate manner, and in whose common hall the principal spiritual courts and the high court of admiralty are held; the London college of physicians, chartered by Henry VIII., and endowed by that monarch and his successors with various privileges, such as the power to inspect the apothecaries' shops, and superintend the drugs sold in and about London, and without a license from which no person, though he may have received a medical degree from a university, is permitted to practise medicine within 7 miles of that city; the Edinburgh college of physicians, instituted in 1681, to make laws for promoting the art and regulating the practice of physic, having similar powers to those of the corresponding college at London, but obliged to admit the professors of physic in the universities of Scotland as honorary members, and to license all those who have received medical degrees from the universities; and several other European colleges of surgery, medicine, or health, which have both a power of police over matters pertaining to the public health and the privilege of instructing and examining candidates for medical degrees. The oldest of these in Germany was established by Frederic William, elector of Brandenburg, in Berlin, in 1685. This was followed by a similar college of health in each of the Prussian provinces, and in 1725 there were 12 *Provinzial Collegia medica* under the general supervision of the Berlin *Ober Collegium medicum*. By the constitution of 1808 the provincial colleges gave way to medical committees, which were organized in 1815 and 1817 as sections of the administrative government. The London college of surgeons, which dates from the reign of Edward IV., is composed of persons empowered to practise the art of surgery in Great Britain, and has 24 councillors and over 500 fellows, with extended rights and privileges. A competent education and at least 8 years of surgical practice are requisite before an examination for a fellowship. The Edinburgh college of surgeons has a corporate character as a royal college. It consists of the surgeons of Edinburgh, has the privilege of examining and of licensing or rejecting all practitioners in surgery in the neighboring counties, and its diplomas are recognized by the army and navy medical boards, and by the East India company, as qualifications for their surgeons.—Colleges as departments of a university arose about the beginning of the 13th century. When the repute of the great scholastic teachers had attracted thousands of students to the university towns, collisions became frequent between the citizens and so many for the most part rich and noble youths. In order to secure to the students a more fixed mode of life, so that their manners and morals should be under stricter supervision, hotels or boarding houses were established in which the scholars lodged together under the direction of a superior. These hotels, which were termed colleges, were gradually endowed by the gifts of charitable persons, till they were able to furnish free lodgings and finally entire support to a certain number of poor scholars. The name college was soon applied to any institution for academic purposes, endowed with revenues, and possessing a private code of laws, whether it were wholly independent or subject to the general government of a university. Collegiate foundations do not appear to have existed in the Saracen schools of Spain, but were first established in Paris, and soon afterward in Oxford and Cambridge, in Bologna and Padua, and in Prague and Vienna. In the 15th century the endowments of popes, kings, dignitaries of the church, and powerful families had made colleges so common in many of the European universities, that every person connected with a university was usually a member of some one of its colleges. Some of them were in the interest of the monastic orders, and their design to train ministers for the church still appears in the prohibition of the fellows of the English colleges from marrying. They were sometimes not only schools for the young, but hospitals for the old. Sion college in London was in the 14th and 15th centuries both a priory and hospital. It is now a corporation of the clergy of the city of London, and also a hospital for 20 poor men and women. Among the oldest French colleges is the Sorbonne, at Paris, founded in 1250, in which at first 16 students of theology were gratuitously supplied; that of *Bons Enfants*, founded in 1257; that of Harcourt, in 1280; and that of Navarre, in 1304. Though they were charitable institutions, some of them became so renowned for the learning and eloquence of their lecturers that nobles and princes of the blood placed their children in them. In the university of Paris, 15 colleges were founded in the 13th century, and the number has since been increased to about 100, more than half of which are of slight importance. Each college became a distinct faculty, having lectures and disputations only in a single department, and the university was a collection of colleges, each of which gave instruction exclusively in one branch of learning. The colleges in the English universities assumed at first a different character, being not designed to confer instruction, but to administer royal or private munificence in aiding students through the university. The task of instruction was, however, gradually transferred from the university to the colleges, till at present the former retains only such general powers as the conferring of degrees or other honors. Each college, instead of limiting its instructions to one department, assumes the entire task of qualifying its members for degrees. The funds support a certain number of graduates termed fellows, who may retain this position for life, unless they inherit estates of greater income, or marry; and there are scholarships, exhibitions, and other stipends which give entire or partial support to a portion of the undergraduates, all of whom are under the superintendence of tutors. Besides those who receive aid from the foundations, there are other independent students, who are styled, according to their rank and expenditure, noblemen, fellow commoners, or commoners. Oxford has 19 colleges and 5 halls, the latter being merely unendowed boarding places, where each student lives at his own expense. Cambridge has 17 colleges.—Colleges in France are now a grade of public schools, corresponding nearly to the gymnasia of Germany, and educating pupils between about the ages of 10 and

are either royal or communal, ac-
s they are sustained by the funds of
or of particular cities. There are 50
former class (termed lyceums since
including 5 in Paris, under the direc-
f an inspector appointed by the acad-
and 315 of the latter, superintended by
nister of public instruction. The course
ly embraces religion, the French, Latin,
reek languages, one or two foreign mod-
ges, philosophy, history, geography,
s, the natural sciences, and draw-
college of France, founded by Fran-
in 1530, presents a system of instruc-
ardly surpassed in vastness by any uni-
. Its origin was due to the impulse giv-
learning in the West by the labors of
Greeks from Constantinople, and to the
tions of Guillaume Budé, a disciple of
es Lascaris. Its professors have always
the name of *lecteurs royaux*. At first hav-
s of but 3 ancient languages, it has now
rs and distinct courses, embracing
y, mathematics, mathematical physics,
ntal physics, medicine, chemistry, nat-
ry of organic and of inorganic bodies,
of nature and of nations, comparative
ion, political economy, the ethics of his-
rchæology, the Hebrew, Chaldaic, Syriac,
, P ian, and Turkish languages, the
e. utchoo Tartar, Sanscrit, and Greek
nd literature, the Latin poetry and
, the Greek and Latin philosophy, the
val and the modern French languages and
, the foreign modern European lan-
and literature, and the Slavic language
erature. All these courses are gratuitous.
g the distinguished men who have taught
college are Gassendi, Tournefort, Lalande, Délambre, Cuvier, Ampère, Thenard, Batteux, Rollin, De Guignes, Delille, Andrieux, Sylvestre de Sacy, and Abel Rémusat. This college and the *jardin des plantes* are almost the only establishments of public instruction in France which survived the tumults of the first revolution.—The national colleges, or *collegium Germanicum*, *C. Græcum*, *C. Anglicanum*, *C. Maroniticum*, and many others, were institutions founded by the Jesuits to train able missionaries for Protestant countries. The oldest of these, and the model of the others, was the German college, established at Rome by Ignatius Loyola in 1552, which enjoyed all the rights of the Roman university, its students receiving instruction from the learned Jesuits of Rome, and being under the control of 6 cardinals called protectors. These colleges were established for the most part between the pontificates of Gregory XIII. and Gregory XV., at Rome, Fulda, Prague, and Vienna.—When a separate college contains within itself all the faculties and privileges of a university, it is often designated by the latter name, and therefore the terms college and university are in many cases used indiscriminately. Thus, Trinity college, in Dublin, is also called a university, and there is no fixed distinction between colleges and universities in the usage of the United States. All American colleges confer degrees in the arts, and the older and more flourishing of them have faculties and give instruction also either in medicine, divinity, or law, or in a few instances in all the professional studies. (Particular accounts of colleges are given under their names in special articles. See also UNIVERSITY.)—The following table presents a general view of the colleges in the United States, according to the "American Almanac" for 1859:

TABLE OF COLLEGES IN THE UNITED STATES.

eges marked thus (*) are under the direction of the Baptists; thus (†), Episcopalians; thus (‡), Methodists; thus (§), Catholics. With respect to the colleges which are unmarked, the prevailing religious influence of those that are in England states is Congregationalism; of most of the others, Presbyterianism. By instructors, in the following meant those connected with the undergraduates; and by students, except in the Roman Catholic institutions and a he colleges in the southern and western states, is meant undergraduates, or members of the 4 collegiate classes, not g such as are pursuing a professional education, or such as are members of a preparatory department. Some of the enumerated are not in full operation, and scarcely deserve a place in the table. The column of libraries includes ber of volumes in the college libraries and in the students' libraries. The following table shows the condition of ges near Jan. 1858. Returns have not been received from several of them to so late a date.

Name.	Place.	Founded.	Inst'ors.	No. of Alumni.	Students.	Vols. in libraries.
n	Brunswick, Me.	1794	10	1,200	196	29,870
lle*	Waterville, "	1820	5	400	16	10,000
nth	Hanover, N. H.	1769	11	4,365	249	31,900
ity of Vermont	Burlington, Vt.	1791	7	659	104	13,000
ury	Middlebury, "	1800	6	960	82	8,500
University†	Norwich, "	1834	4	8	80	1,650
University	Cambridge, Mass.	1636	24	6,876	409	123,400
s	Williamstown, Mass.	1793	9	1,602	224	18,355
t	Amherst, "	1821	13	1,237	221	21,000
oss§	Worcester, "	1843	8	100	75	6,500
ollege	Medford, "	1854	5	3	50	5,000
University*	Providence, R. I.	1764	10	1,939	205	34,900
	New Haven, Conn.	1700	24	6,597	447	65,000
	Hartford, "	1825	12	480	60	13,500
an University‡	Middletown, "	1831	7	543	151	13,000
ia†	New York, N. Y.	1754	6	1,600	143	18,000
	Schenectady, "	1795	14	3,483	78	15,000
n	Clinton, "	1812	8	1,183	23	10,500
University*	Hamilton, "	1846	9	391	145	7,457
Free College†	Geneva, "	1825	6	212	96	8,700
ity of the city of New York	New York, "	1831	16	510	138	4,300
ity of Rochester*	Rochester, "	1850	8	114	165	5,200
's§	Fordham, "	1840	13	181	50	12,820

Table of Colleges—*Continued.*

Name.	Place.	Founded.	Instructors.	No. of Alumni.	Students.	Vols. in Library.
College of New Jersey	Princeton, N. J	1746	18	2,565	273	11,500
Rutgers	New Brunswick, N. J	1770	7	619	106	12,000
Burlington†	Burlington, "	1846	29	..	115	1,500
University of Pennsylvania	Philadelphia, Penn	1749	12	1,200	129	3,500
Dickinson‡	Carlisle, "	1783	8	646	124	21,200
Jefferson	Canonsburg, "	1802	10	1,492	228	11,000
Washington	Washington, "	1806	6	730	160	4,500
Alleghany‡	Meadville, "	1817	6	258	90	9,000
Pennsylvania	Gettysburg, "	1832	7	230	60	8,000
Lafayette	Easton, "	1832	6	200	100	4,500
Franklin and Marshall	Lancaster, "	1836	6	240	90	10,000
University at Lewisburg*	Lewisburg, "	1849	4	57	45	4,500
Polytechnic	Philadelphia, "	1853	6	7	84	
Delaware	Newark, Del	1833	6	106	50	10,000
St. Mary's§	Wilmington, Del	1847	7	97	110	2,500
St. John's	Annapolis, Md	1784	6	254	115	5,000
St. Charles's§	Ellicott's Mills, Md	1805	4	146	123	600
Mount St. Mary's	Emmitsburg, "	1830	24	187	136	4,000
St. James's†	Washington co., "	1842	15	125	50	2,500
Washington	Chestertown, "	1783	5	..	70	1,500
Georgetown§	Georgetown, D. C	1792	21	295	245	26,000
Columbian*	Washington, "	1821	8	305	66	7,500
William and Mary†	Williamsburg, Va	1692	6	3,000	64	9,000
Hampden-Sidney	Prince Ed. co., "	1776	5	864	119	8,000
Washington	Lexington, "	1782	6	898	90	4,500
University of Virginia	Charlottesville, "	1819	16	121	419	25,000
Randolph-Macon‡	Boydon, "	1832	6	200	76	9,000
Emory and Henry‡	Washington co., "	1838	5	108	54	4,400
Rector*	Taylor co., "	1839	3	..	50	2,500
Bethany College	Bethany, "	1841	6	80	141	2,500
Richmond*	Richmond, "	1840	6	37	98	1,500
Virginia Military Institute	Lexington, "	1839	13	238	130	4,000
University of North Carolina	Chapel Hill, N. C	1789	15	1,835	421	12,700
Davidson	Mecklenburg co., N. C	1840	7	206	80	3,500
Wake Forest*	Forestville, "	1838	5	43	76	3,000
Charleston	Charleston, S. C	1785	6	124	70	2,500
South Carolina	Columbia, "	1801	8	2,000	212	26,000
Franklin	Athens, Ga	1785	10	800	160	14,000
Oglethorpe	Milledgeville, Ga	1838	5	204	97	4,500
Emory‡	Oxford, "	1837	6	292	196	1,700
Mercer University*	Penfield, "	1838	8	158	40	7,500
Wesleyan Female	Macon, "	1839	9	321	150	1,500
University of Alabama	Tuscaloosa, Ala	1831	9	318	144	10,000
Florence Wesleyan‡	Florence, "	1830	5	160	112	2,000
Spring Hill§	Spring Hill, "	1830	20	225	80	5,000
Howard*	Marion, "	1848	6	55	58	3,000
Oakland	Claiborne co., Miss	1830	5	125	70	6,000
University of Mississippi	Oxford, "	1848	9	158	163	3,000
Mississippi College*	Clinton, "	1851	5	14	44	1,652
Semple Broaddus	Centre Hill, "	1856	4	..	75	..
Centenary‡	Jackson, La	1845	9	150	169	5,500
Washington	Washington co., La	1795	3	116	23	1,400
University of Nashville	Nashville, Tenn	1806	7	442	101	12,500
Franklin	Near Nashville, Tenn	1844	6	51	106	2,500
East Tennessee	Knoxville, "	1806	..	160	..	5,000
Cumberland University	Lebanon, "	1844	11	95	165	4,000
Jackson	Columbia, "	1838	5	56	84	4,000
Union*	Murfreesboro', "	1848	6	84	150	4,500
Greenville	Greenville, "	1796	2	..	90	2,500
Transylvania	Lexington, Ky	1798	8	610	25	14,000
St. Joseph's§	Bardstown, "	1819	16	155	..	7,500
Centre	Danville, "	1823	5	452	150	3,000
Georgetown*	Georgetown, "	1840	8	..	182	7,500
Kentucky Military Institute	Franklin Springs, Ky	1846	9	119	152	4,000
Paducah	Paducah, "	1852	6	..	15	[illegible]
Ohio University	Athens, Ohio	1804	6	179	62	5,000
Miami University	Oxford, "	1824	8	698	127	7,000
Franklin	New Athens, Ohio	1824	4	250	65	2,000
Western Reserve	Hudson, "	1826	7	316	97	9,500
Kenyon†	Gambier, "	1826	10	216	103	12,500
Denison*	Granville, "	1832	5	62	67	4,500
Marietta	Marietta, "	1835	6	195	50	12,000
Oberlin College	Oberlin, "	1834	8	277	110	4,000
Ohio Wesleyan University‡	Delaware, "	1842	8	90	182	10,000
Wittenberg	Springfield, "	1845	6	33	46	6,000
Urbana University	Urbana, "	1850	8	..	21	2,500
Antioch	Yellow Springs, Ohio	1853	13	15	166	2,500
Indiana State University	Bloomington, Ind	1830	6	342	115	2,500
Hanover College	South Hanover, "	1829	8	228	73	3,500
Wabash	Crawfordsville, "	1833	7	110	33	4,000
Indiana Asbury University‡	Greencastle, "	1837	10	140	219	12,000
Illinois	Jacksonville, Ill	1830	7	180	70	3,500
Shurtleff*	Upper Alton, "	1835	6	17	40	1,500
McKendree‡	Lebanon, "	1835	8	80	23	2,000
Knox	Galesburg, "	1837	7	33	36	3,500
St. Louis University§	St. Louis, Mo	1832	15	160	134	22,000
St. Vincent's	Cape Girardeau, Mo	1843	10	53	8	5,500

Table of Colleges.—*Continued.*

Name.	Place.	Founded.	Inst'ors.	No. of Alumni.	Students.	Vols. in libraries.
	Lexington, Mo.	1844	3	19	28	1,200
ty of the State of Missouri	Columbia, "	1839	9	130	39	3,500
es‡	St. Charles, "	1837	6	25	50	1,000
ty of Michigan	Ann Arbor, Mich	1837	14	221	276	10,000
p's§	Near Detroit, "	1839	4	..	30	3,000
n University	Madison, Wis.	1851	7	6	30	1,900
	Beloit, Rock co., Wis.	1847	9	32	40	3,100
e University	Appleton, "	1849	8	7	129	3,800
ee Female	Milwaukee, "	1853	4	20	76	600
te University	Iowa City, Iowa	1855	4	..	..	200
sleyan University‡	Mt. Pleasant, "	1855	9	50	..	....
ra§	Near San José, Cal	1855	16	..	158	....

LEGE HILL, a thriving post village of
m co., Ohio, 6 m. N. of Cincinnati, and
of two prosperous institutions, viz.:
college, formerly Carey's academy,
about 200 students, and the Ohio female
chartered in 1851, and having 150 stu-
Pop. of the village, 500.

LEGE OF ST. JAMES, a post village of
gton co., Md. The institution from which
es its name is a flourishing college and
tory school under the direction of the
Episcopal church. It was opened
and chartered in 1849.

LEGIAL SYSTEM, in ecclesiastical his-
ie of the schemes proposed for reconcil-
rch and state, expressed in the saying
orf that the church is a *collegium*,
tati subest (a college subordinate to
e). According to the view more com-
developed by Pfaff (1719), the church
society, independent in ecclesiastical
subject with certain reservations to
civil affairs.

LES, Christopher, a philosophic ad-
r, was a native of Ireland, but the
eriod of his birth is still left to con-
, which assigns 1738 as the year; he
New York in 1821. Of his parents no
s exist. Left an orphan at an early
was fortunate in being placed under the
Richard Pococke, the oriental traveller,
bishop of Ossory. The pursuits of
led the mind of Colles to mechanical
ysical inventions; yet he did not over-
ie acquisition of the learned languages.
after the death of Pococke in 1765,
ut a wanderer from his native land, and
him in Philadelphia in 1772, delivering
upon pneumatics, illustrated "by a va-
curious and entertaining experiments in
pump lately invented by him." He fur-
oposed to his audience, if adequate pa-
was afforded, to give 3 lectures on hy-
ics and hydraulics, "with the motion of
nd their action upon different machines,
and water mills, various kinds of pumps,
am engines." According to Westcott, his
ere not successful. The year following
engaged in delivering a series of lec-
New York on inland lock navigation.
eported to have been the first individual
ook to build a steam engine in this
he designed it for a distillery in Philadelphia, but on account of his limited means his machine proved defective, and his appeal for aid by the philosophical society abortive, though the committee, with Rittenhouse at the head, commended his talents, and pronounced him worthy of public encouragement. In April, 1774, he proposed to erect a reservoir for the purpose of conveying water through the several streets of the city of New York. His proposals were "read and referred." In 1775 he engaged in a new enterprise, and delivered lectures on gunnery, and was further employed in giving instruction to the artillery department of the American army in the principles of projectiles. He was selected from time to time by detachments of the artillery corps in different stations to give them lessons on the momentum and direction of the cannon ball. He continued in this employment until the arrival of Baron Steuben in 1777, when a new organization in the military department took place. Colles was the first person who suggested canals and improvements to connect Lake Ontario with the Hudson. According to the records of the assembly of New York, in Nov. 1784, he presented a memorial on the subject, and in April following a favorable report was made thereon. He visited the country, and took an actual survey of the principal obstructions upon the Mohawk river as far as Wood creek. The results of his tour were published by Samuel Loudòn in 1785. In this remarkable pamphlet he has the following sentence: "The amazing extent of the 5 great lakes, to which the proposed navigation will communicate, will be found to have 5 times as much coast as all England, and the countries watered by the numerous rivers which fall into these lakes full 7 or 8 times as great as that valuable island." As the war of the revolution arrested the progress of his measures for supplying the city by his reservoir, which he designed to be erected, with other works, between Pearl and White streets, we find his name again recorded as an applicant for a contract to convey water through the city by means of pipes. Dr. Brown recommended to the common council the Bronx river for that purpose, and this, it is affirmed, is the first indication on record that a supply was to be looked for from without the city. Doubtless the original suggestion of the Bronx came from Colles. In 1808 Colles published an elaborate pamphlet on the interests of the United

States of America, extending to all conditions of men, by means of inland navigable communications. He called his plan the timber canal. He was never idle. His devices to secure an "honest livelihood" were almost countless. His various knowledge was admitted, his science was considered real, yet he seemed to be perpetually appropriating it to merely conjectural measures. Wearied at last by disappointments, he now summoned resolution to enter upon a new service, and commenced as tourist a journey of some extent, and not without personal hazard at that early day, through Pennsylvania and New York, and in 1789 he published a book of roads through New York. It is reported that he derived some trifling pittance from this performance, and with his frugal habits was capable of maintaining himself above pressing want. In 1794 we find him settled in the city of New York, and earnestly engaged in the manufacture of bandboxes and paper hangings. His support was slender, and he now turned his thoughts to various devices in domestic economy. His rat and mouse traps for a while added to his fiscal resources; and learning the value of Prussian blue, he entered upon the preparation of that article with other pigments. His philosophy was put to a further test in his interviews with Blanchard the aëronaut, and George Baron the mathematician, who had commenced the publication of the "Mathematical Correspondent," a work somewhat after the plan of that issued by Hutton of London. The almanac makers also, when at fault, waited upon him for astronomical calculations. To all these avocations he added the collecting and arranging of opossum and beaver skins, Indian wares and tomahawks, with other curiosities with which he had become familiar during his tour through the country of the Mohawks. His chemical knowledge was occasionally displayed in the manufacture of fireworks. A benignant omen at length appeared in his horizon. The constitution of the United States being adopted, and the duties on spirits established by congress, both the hydrostatics and the chemistry of Colles were called into requisition, and he was appointed to test the specific gravity of imported liquors. His artistic skill was also turned to the making of proof-glasses. But this cheering condition had its end; and his last resource was now the making of thermometers and the projection of his telegraph, with the still more fortunate expedient of the use of the telescope and microscope. His family wants were thus casually supplied, and through the instrumentality of his long-tried friend, John Pintard, he received the appointment of superintendent of the academy of fine arts. His residence was now secured in the government house on the Bowling green, where the academy had its rich property, and where he died, aged about 83 years. His long life was marked by severe trials and perplexing incidents. He was wont to say, "if he had been brought up a hatter, the people would have come into the world without heads." The victim of penury, his integrity was never questioned. His nature was benevolent, his morals void of offence toward God and man. His long career proved useful to his adopted country in that early state of the arts when wooden axe handles were imported. Clinton included him among the earliest and prominent instigators of the canal policy, and Hosack has recorded his services. Humble as was his condition, Hamilton paid him marked deference, and often visited him. Jefferson corresponded with him. Jarvis painted his portrait. When the great celebration in Nov. 1825, took place, on the completion of the canal, the effigy of Colles was borne among the emblems which characterized that vast procession.

COLLET (Fr. *collet*, Lat. *collum*, neck), in jewelry, that part of a ring which surrounds the stone. The term is also applied in glass making to that part of the glass vessel which remains attached to the iron instrument with which the glass is removed from the melting pot. In botany, it denotes the part of the axis of a plant whence the stem and root diverge; and in gunnery, the portion of a cannon between the astragal and the muzzle. Collet is also a small collar worn by the inferior clergy of the Roman Catholic church.

COLLETON, a S. district of South Carolina, bordering on the Atlantic; area, 1,672 sq. m.; pop. in 1850, 39,505, of whom 31,771 were slaves. The Edisto, Ashepoo, and Salkehatchie are the principal rivers. Much of the land is flat, alluvial, and swampy; the drier parts are fertile, and the productions in 1850 amounted to 45,308,660 lbs. of rice, 6,592 bales of cotton, 480,934 bushels of corn, 403,374 of sweet potatoes, and 36,065 of oats. There were 44 churches, and 294 pupils attending schools and academies. The palmetto and the cabbage palm are indigenous to this district. Capital, Waterborough.

COLLETON, James, colonial governor of South Carolina from 1686 to 1690. He was a brother of one of the proprietaries, was appointed landgrave (one of the orders of nobility under Locke's constitution for South Carolina), and endowed with immense possessions in land. Assuming the government when disputes were rife concerning tenures of land and quit-rents, he procured alterations in the fundamental laws, declared martial law during a rebellion of the people, and was impeached by the assembly and banished from the province.

COLLETTA, Pietro, a Neapolitan patriot, born in Naples, Jan. 23, 1775, died in Florence, Nov. 11, 1831. He took an active part in politics during the French invasion of Naples. Murat made him in 1808 commissioner of Calabria Citra, and in 1812 general and director of bridges and public roads. When the Bourbons returned to power, he was for some time imprisoned. On the outbreak of the revolution of 1820 he was sent as viceroy to Sicily, but was soon recalled and appointed minister of war. After the Austrian intervention he was banished to Brünn in Moravia, but after-rard he was permitted to reside in Florence. Ie wrote *Storia del reame di Napoli dal* 1784 *al* 1825, 2 vols., a 2d edition of which ap- d in 4 vols. in 1837.

OLLIER, Arthur, an English philosopher, n at Langford Steeple, Wilts co., in 1680, d in 1732. He was educated at Pembroke ol colleges, Oxford, and in 1704 became r of Langford, a living which had belong- ccessively to his great-grandfather, grand- r, and father, and which he retained till death. In 1718 he published a work en- d *Clavis Universalis*, in which he main- d both the non-existence and the impossi- y of the existence of any objects external he mind. Berkeley had 8 years before ad- ed incidentally his theory of the negation external world, but the two philosophers ar to have had no knowledge of each other, it is certain that Collier meditated upon his ion for 10 years before promulgating it. h they developed simultaneously the first atic scheme of absolute idealism, and Collier was inferior to his contemporary in the graces of composition than in ess or method, yet the *Clavis Universalis* ced not the slightest attention in England. public libraries of Oxford and Cambridge do contain a copy of the original edition, of which there are but 2 in Edinburgh and one Glasgow; and his name is not contained in principal collections of British biography. ermany a copious and able abstract of its ents was given in 1717, in a supplemental of the *Acta Eruditorum*, and it was u by Wolf, Bilfinger, and others. In 1756 omplete translation of it into German was de by Eschenbach, of Rostock, who affirmed an appendix that no other book had ever him so much trouble to obtain. Thus ed accessible in Germany, Collier has ed among the thinkers of that country repute for talent and originality, and the comparative view of his doctrines and hose of Berkeley is that given by Tennemann. eid, who seems to have stumbled upon the opy of the *Clavis Universalis* in the Glasgow ibrary, was the first to call attention to it in nd; and in 1837 it was contained in a vol- of metaphysical tracts, published in Lon- which had been prepared for the press by Parr. In the same year a volume of me- rs of his life and writings, by Robert Benson, eared in London. The *Clavis* was subse- ly reprinted in handsome form in Edin- Other publications of Collier were the cimen of True Philosophy," published in , the "Logology," in 1732, and two con- roversial sermons which have not been re- overed. In religion he was an Arian, and lso a high churchman on grounds which his ssociates could not understand. Collier an- icipated an observation of Sir William Ham- lton, that some of the schoolmen refrained rom following out their argument to the ex- ent of the negation of matter, only because absolute idealism was inconsistent with the Catholic doctrine of the eucharist.

COLLIER, Henry Watkins, an American jurist and statesman, born in Lunenberg co., Va., Jan. 17, 1801, died at Bailey's Springs, Lauderdale co., Ala., Aug. 28, 1855. In the autumn of 1801 his father removed to Abbeville district, S. C., where the son was educated. In 1818 he removed with his father to Madison co., Ala. In 1819 he commenced the study of the law at Murfreesboro', Tenn., and completed his legal studies at Huntsville, Ala. He was admitted to the bar in 1821, and commenced practice at Huntsville. In 1823 he removed to Tuscaloosa, where he continued to reside until his death. In 1827 he was elected judge of the circuit court for the Tuscaloosa district, and, according to the then existing arrangements, became *ex officio* one of the judges of the supreme court. This continued until 1832, when a separate supreme court was established. He served as circuit judge until 1836, when he was appointed associate justice of the supreme court. In 1837 he was promoted to the chief justiceship, which position he held until he was nominated for governor in 1849. He was unanimously elected, having no opponent. During his term of office hè was subjected to severe trials and embarrassments, from the fierce agitation growing out of the famous compromise of 1850. In the states of Georgia, Alabama, and Mississippi, the old lines which divided the whigs from the democrats became somewhat obliterated, and parties reorganized into what were known as southern rights and union parties, each taking extreme ground. Each of these bodies sought to strengthen its organization by securing the coöperation of the executive of the state; but Gov. Collier pursued a moderate course, and was taken up spontaneously in 1851, without the formality of a convention, and reëlected without opposition. At the expiration of his second term, in 1853, he retired to private life.

COLLIER, Jeremy, an English divine, one of the most eminent of the nonjurors after the revolution of 1688, born at Stow-with-Quy, Cambridgeshire, Sept. 23, 1650, died in London, April 26, 1726. Educated by his father and at Caius college, Cambridge, he became successively chaplain to the countess dowager of Dorset, rector of Ampton, in Suffolk, and in 1685 lecturer of Gray's Inn, in London. Upon the change of government by the revolution, he engaged in vigorous controversy with Bishop Burnet and others, concerning the new establishment of church and state, which he opposed during many years in numerous pamphlets, written with great ability, and with great command of sarcasm and rhetoric, and several of which are among the best productions of the Jacobite press. He was imprisoned for a short time in 1688 for a publication in favor of the dethroned monarch, and was again arrested in 1692 on the Kentish coast, where he was supposed to be in communication with the Jacobites across the channel, but was released on both occasions without trial. In 1696, when Friend and Parkyns were condemned for plotting to assassinate King William, Collier attended the prisoners in Newgate, accompanied them to the gallows at Tyburn, and there gave them absolution. The result was a general clamor against him, and the issue of a warrant for his arrest, which, however, he was able to escape; and from his hiding place he published a defence of his conduct, which immediately received a crowd of answers, one of which was a solemn manifesto signed by the two archbishops, and by all the bishops then in London, 12 in number. He refused to acknowledge the jurisdiction of the court, which would have treated him with lenity if he would have put in bail, and therefore suffered a sentence of outlawry, which was not reversed during the remainder of his life. He published in 1697 the first volume of his "Essays upon several Moral Subjects," and in the next year began his important efforts for the purification of the lighter literature of England from the taint which it had contracted during the anti-Puritan reaction under Charles II. His "Short View of the Immorality and Profaneness of the English Stage" engaged him in a lively controversy with Congreve and Vanbrugh, and the wits of the time looked in vain to Dryden to support them against the sarcasm of the divine. The discussion lasted for 10 years, during which Mr. Collier saw a decided improvement in the character of the English stage. Among his later publications were a translation of Moreri's "Historical Dictionary" (1701–'21), an "Ecclesiastical History of Great Britain" (1708–'14), 2 additional volumes of "Essays upon Moral Subjects," and a volume of "Practical Discourses" (1725).

COLLIER, JOHN PAYNE, an English author and commentator on Shakespeare, born in London in 1789. He studied law at the Inner Temple, and was for several years parliamentary reporter for the "Morning Chronicle" newspaper. Early acquiring a taste for the old English poets, he began to publish in journals and reviews criticisms and annotations on them, and seconded the efforts of Charles Lamb and others in drawing from obscurity the dramatists nearly contemporary with Shakespeare. In 1820 he published the "Poetical Decameron," a series of dialogues on the poets chiefly of the reigns of Elizabeth and James I.; issued in 1825 a poem, entitled the "Poet's Pilgrimage;" and in 1825–'27 included 11 additional dramas in a new edition of Dodsley's "Old Plays." In 1831 appeared his "History of English Dramatic Poetry," which contains a great variety of information collected from original sources, and which caused many valuable collections, as the libraries of the duke of Devonshire and of Lord Ellesmere, to be freely opened to his researches. In Lord Ellesmere's collection of MSS. he found most of the materials for his series of "New Facts" and "Further Particulars" concerning Shakespeare and his works, published between 1835 and 1839. In 1844 he completed the publication of a new life of Shakespeare, and a new edition of his works, for which he had collected materials during 20 years, the text being founded on a new collation of the old editions. In 1852 he published "Notes and Emendations" to the text of Shakespeare, from early manuscript corrections on the margin of a recently discovered copy of the folio of 1632, and in the next year published a new edition of the plays, with the text regulated by collation of this folio and of other old editions. These publications excited much interest and discussion concerning the date and authority of the manuscript corrections. Mr. Collier has been a zealous member of both the Camden and Shakespeare societies, for which he has edited several interesting works, as the "Memoirs of Edward Alleyn" (1841); the "Diary of Philip Henslowe" (1845); "Memoirs of the principal Actors in Shakespeare's Plays" (1846); and "Extracts from the Registers of the Stationers' Company from 1557 to 1580" (1848–'49). He has also contributed frequently to the transactions of the society of antiquaries, of which he is vice-president, and receives an annual pension from the crown of £100, granted him by Sir Robert Peel.

COLLIERY, a term applied to coal-mining establishments, including the mines and machinery employed. In their simplest form, as seen in the bituminous coal fields west of the Alleghany mountains, where the strata lie nearly horizontally, and the coal beds included among them pass upon a level through each hill, the collieries are comparatively insignificant establishments, employing little or no machinery. Narrow passages, not exceeding 3 or 4 feet in height when the beds are small, are excavated in the coal, and supported by a rude framework of posts set at the sides and braced across at the top. A track is laid upon the floor for the small coal wagons to run upon, and this is extended as the excavation proceeds. Men or boys run out the wagons by hand, or mules are employed of a size suitable to the height of the levels. The cars being often made to discharge themselves on the outside, the mules soon learn to come out with the loaded wagons, and return with the empty into the dark passages, of their own accord. Within the hill the passages branch out in various directions, generally after a regular plan of gangways and chambers, so laid out that the greatest amount of coal can be safely removed with the least amount left as pillars to support the superincumbent strata. The largest logs of wood set on end, and called props, aid to sustain this weight; but when the locality is nearly exhausted, the pillars of coal may at last be removed, commencing at the extreme portions and letting the whole mass above gradually settle down. In these works, simple as they are, two sources of trouble must be provided against, as in the collieries of greatest pretensions. Air circulates slowly through long underground passages, in the warm, sultry weathy not entering more than 100 yards, sufficiently pure for men to continue work and for candles to burn. Shafts sunk rom higher ground down to the workings ct as chimneys and cause a free circulation of ; but it is not always convenient or practible to sink these shafts. If the bed lies inclined, gangways coming out to the surface at or more points, at different elevations, and connected together within, tend to cause a circulation of air through all their extent. Artificial means, however, have sometimes to be employed, as forcing air by a fan or other blower nto the extreme workings, through long wooden boxes reaching to them from the outside. The other cause of trouble is the collecting of water in the mine by the bed sloping down rom the entrance. This involves cutting a rain to the level of the lowest working, or ng the mine at a lower point on the slope bed, or removing the water by pumping. e expenses of ventilation and drainage often greater than those of extracting the s apparent that the position of a bed tion to the facilities of effecting these is a subject of the first importance. y properties containing a coal bed of exnt quality are rendered of little value by ta sloping in, while others adjoining, the same bed, are worked to profit by n of being situated upon a lower line of outcrop. Difficulties are often encounter- the unsoundness of the roof, which is ly of black slate, and, unless in broad, sheets, is not easily sustained except with us props. Sometimes even the upper of the coal bed must be left for the roof, complete thatching of wood be extended the workings, and supported with props. coal when sound is broken down in large blocks, by cutting beneath them with -pointed picks as far as the miners can , and also on each side, and then from ilar cut horizontally along the top wedgdown the mass. Powder is occasionally to advantage in small charges instead of s. The blocks thus thrown down someount to 60 or 80 or even more tons of coal. Particular care is required to prevent the coal from being broken too fine, and making too great waste. Such is the character of the collieries of the western coal fields. n the city of Pittsburg may be seen, in the hills on the opposite side of the Mola river, the openings, 800 feet or more e level of the river, leading into the t coal bed which has been so extensively worked at this point. The long lines of levels lead for miles in different directions; and so conveniently was the coal obtained, that for a long time it was delivered at the mouth of the mines at a cost not exceeding 1¼ cents per bushel, or about 45 cents per ton. Outside of the mines, in collieries placed like these, inclined planes are required, or shutes, if the coal is sound enough to bear this mode of moving it, for delivering it upon the level below.—Coal is rarely worked in open quarries. If the beds lie near the surface, unprotected by a rock roof, they are most likely to be worthless, from the effect of atmospheric agencies in disintegrating the coal, and converting it into a rotten substance called coal smut. In the anthracite region, however, the beds occur of such enormous size, that it is sometimes profitable to remove large bodies of the covering strata, and work the mine open to the day. Thus was uncovered the great arch of anthracite curving over the summit of the Mauch Chunk mountain, the great body of coal, from 35 to more than 60 feet in thickness, well paying for the removal of 5 or 6 yards of concentric overlying strata with the superficial soil. An area of about 10 acres was thus stripped, and the coal removed by a series of steps, along which temporary tracks were laid for the wagons to run upon, which carried away the coal and refuse slates interstratified with it. From this small area it is estimated that 850,000 tons of coal have been taken, the value of which in the mine is usually rated at about 30 cents per ton. As the bed of coal on each side of the arch declined under deeper cover, the open system of mining was abandoned, and the ordinary underground method adopted of following the bed down its slope. The Baltimore mines, near Wilkesbarre, are another example of this mode of working. The bed along its outcrop was for a time most conveniently worked as an open quarry; but gradually getting under deeper cover, this system was at last abandoned, and huge tunnels 25 feet high, which is the thickness of the coal stratum, were extended upon its course, branching out within the hill in wide avenues and extensive chambers, through which a locomotive and train of cars might pass. Huge pillars of coal of circular shape are left to sustain the roof, which, formed of the broad sheets of the coal slate, presents a smooth ceiling of glossy blackness.—But it is not often that large quantities of anthracite are obtained thus conveniently near to the surface. By the dip of the strata the beds are carried to unknown depths, at various angles of inclination; and they appear upon the other side of the basin, it may be many miles distant, with more or less uniformity of arrangement. In some districts they are greatly disturbed and broken up, and the continuation of each bed is interrupted by displacements called faults; sometimes even the beds are thrown into a zigzag arrangement with sharp flexures, as if all had been folded and compressed together by some irresistible power. In such instances the coal is likely to be crushed and rendered useless, and the beds to present great and sudden variations of thickness. In the English coal fields faults are of very frequent occurrence. Areas of several square acres or square miles appear to have been lifted up or sunk down, sometimes several hundred feet; and no evidence is presented upon the surface of these interruptions to the continuity of the strata. All such irregularities require consideration in laying out large collieries in districts where they are to be looked for. The position of the coal beds should be ascertained as nearly as possible by borings in advance of regular operations, or by the indications afforded by neighboring mines. This is a common practice in the English collieries, and is called proving the field. It determines the most proper point for "winning" the coal, which is reaching it by means of a level driven into the side of a hill, or by a vertical shaft sunk from the surface through the different strata down to the coal. The shaft is usually sunk with particular reference to the permanent drainage of the mine, and for this reason is located in a position to reach the coal bed at a lower level than that of the great body of the coal to be extracted. It may pass through several different coal beds, all which may be worked by means of it. The water circulating among the strata above finds its way into the sump or large pit sunk at the bottom of the shaft, and it is pumped from this to the surface. The same shaft may be used for hoisting to the surface the coal and slates removed in the excavations, and may also serve to aid in the ventilation of the mine, and again as a ladder way for the workmen. When intended for all these purposes, it is made of large size, 15 feet or more in length by 7 or 8 in width, and divided by board partitions into several shafts extending to the bottom. They are often, however, made of circular or elliptical area, and from 10 to 15 feet in diameter; these, too, are divided into 3 parts. The position of the coal beds of the James river basin, near Richmond, Va., renders this mode of "winning" the coal the most available; but in the anthracite region the more common practice is to follow the coal down its slope from its outcrop, extending the pumps as the depth increases, and laying two tracks on the floor of the slope, upon which the wagons pass up and down; a road or ladder way is made between the tracks, and the pumps pass down sometimes on each side next the walls, the whole width of the opening often being over 20 feet. In the Richmond coal field are the deepest vertical shafts in this country. Some of them reach the great coal bed at the depth of more than 700 feet, and are continued through it for 40 or 50 feet more. To raise the water from such a depth several sets of pumps are required, all of which are worked by the steam engine at the surface, long pump rods extending down the shaft to the lower sets. Each pump takes the water from a reservoir below, and discharges it into one above. This also catches a considerable part of the water flowing at its level, thus saving a portion of the power that would be required to raise it if allowed to flow down to the bottom. This, and other reasons, such as the great strain of the full column upon a single pump, and the interruption an accident to it might occasion to the working of the mine, render this arrangement of the pumps into separate lifts the most economical; and the maximum vertical height of any lift is found most advantageous at from 150 to 200 feet. The Cornish forcing pump is employed, except in sinking, when the lifting pump is commonly preferred. The rods of the former are made of stiff and heavy wood, 4 to 6 inches square, and of weight more than sufficient to counterbalance that of the column of water. Being raised by the engine, and then allowed to descend, their gravity forces the water up the pipe. In the lifting pump the weight of the column of water is added to that of the rods; and these, attached to one end of a lever beam, are balanced by a counterpoise on the other end.—The sinking of a main shaft in the deep basins of the English coal fields is often an undertaking of great importance, involving heavy outlays, sometimes extending through several years, before the coal bed is reached. "The depth and nature of the alluvial cover to the rock strata," says a recent writer, "the weight of water to contend with, engine power, arrangements for future ventilation, beside many local difficulties for which no rule can be applied, are all points requiring the greatest deliberation and forethought. And when we consider that the deepest shaft in Great Britain was sunk and fitted up with engine power, &c., at an outlay of £100.000, extending over a period of 10 years, we will then be able to form an idea of the cost and time generally required for such operations, however simple." Tomlinson mentions that £50,000 has often been expended before the coal seam intended to be worked was reached. The shafts in the northern coal field are rarely less than 150 feet in depth, and some are 1,800 feet deep. A considerable portion of the expense incurred in these works is in arresting the flow of quicksands, which are generally encountered near the surface, and also the influx of water, streams of which are met with at all depths. This is accomplished by a system of "tubbing," which is encasing the shaft in a lining of thick plank braced within by sets of timber arranged at intervals around the sides. For round shafts cylinders of cast iron have for some time been used in the north of England, made in pieces, which are sent down and fitted water-tight into the places prepared for them. Quicksands and treacherous ground of this nature must first be kept back and temporarily secured by a tight wooden casing, within which the permanent one is placed. The tubbing of the upper part of the shaft, above the solid rock, and resting upon it, is sometimes constructed of brick or stone work laid in hydraulic cement. The ordinary cost of a shaft 11 feet diameter and 900 feet deep is estimated in England at $10,000 to $12,500. One of 6 feet diameter and 200 feet deep can usually be sunk and walled at the rate of $5 per foot; but if the ground be treacherous, or water "feeders" are to be reduced, it may be necessary to put up a pumping engine of 200 to 300 horse power, at a cost of not less than $27,000. In the United States the same work would be much

xpensive. From the bottom of the shaft
l level or gallery is extended each way on
ike of the coal, following its course for
ds of feet, and gradually carried on as the
ontinues to be worked, till, as in some of
ginia mines, it may be traversed for miles.
ans of this shaft and gallery all that por-
the coal bed above the level of the latter is
be won. This gallery is the great work-
nue of the mine. In passing along it, the
d is seen on one side, rising it may be
or at a gentle angle; on the other it
of sight below the level of the floor.
alled headways are directed up the
manner of narrow cross streets, ex-
d at intervals in the coal, down which
al is slid to the main level, and re-
o the wagons, to be conveyed either
or by a horse or mule to the foot of
and hoisted to the surface. Other
are excavated in the coal parallel with
west one at different levels above, and
together by the cross passages or
The mine is thus divided into
solid blocks of coal forming the
of the roof. These are finally removed,
block at a time, the roof being par-
ported by props, or by filling up with
eaps of waste or stones; or, as is most
ly the case, it is allowed to settle down.
t of this undermining in the large Eng-
ies, as well as in some of our own, is
u the surface in dwelling houses stand-
ous angles of inclination, some even
y urown down and lying in ruins. In
rt of the commissioners appointed by par-
t, it is stated that "it is often a serious
to find a sound site for a church or
building. . . . There is an instance in the
of Sedgley, of a church and parsonage
recently erected, composed of wooden
work, which will admit of their being
d up into the perpendicular again, when-
y may be thrown out of it. Cellars
dwelling houses are occasionally filled
uoke-damp, arising from old workings,
egree that makes it dangerous to enter
Very curious effects are seen in some
mines resulting from the immense pres-
pon the pillars of coal. The strata form-
e floor, when of a soft nature, curve up-
nore and more, until at last they entirely
vacant space of the levels. The roof
t is sometimes forced down, producing
effect. The former movement is called
, the latter a sit.—The coal is sent up to
rface at some mines in the wagons, at
in baskets holding several hundred
t each, and at others in iron cages, gener-
e coarse and the fine coal each by itself;
al is given to the engineer above by
of a wire extending from the bottom
top and there attached to a bell. The
finally to be screened before it is fit for
arket. The large coal in the anthracite
is passed between two heavy iron cylinders which are armed with powerful teeth, by which it is reduced to smaller size. From these it passes through a revolving cylindrical screen of strong iron wire, set in an inclined position and elevated 15 feet or more above the ground. The meshes are so graduated as to separate the different sizes, causing each to drop through into its appropriate shute or bin, placed beneath the screen. In these, boys are kept at work throwing out the pieces of slate, &c., that fall through with the coal. The wagons, which take the coal away from the mine, pass upon a track under the mouths of these bins, and, the gates being raised, are loaded by the coal sliding down into them. Steam power is required for crushing the coal, raising it to the screen, and keeping this in operation. Engines of from 10 to 20 horse power are employed for this work in the anthracite collieries, while others of from 50 to 90 horse power are required to work the pumps and hoist the coal up the slopes. Beside the coal hoisted, immense quantities of broken slates and refuse matter are brought up, which accumulate in huge piles about the collieries.—In the deep bituminous coal mines a complete system of ventilation is of the utmost consequence; for, beside the foul air generated by the breath of men and horses, by the burning of candles and of gunpowder, inflammable gases issue in jets called blowers from crevices in the coal, and mingling with the air in the mine form mixtures which, on the approach of a lighted candle, explode with the most destructive violence. In some coal seams these blowers issue from every hole drilled for the blast. They suddenly come forth from the cavities broken into the coal with the pick, creating a singing noise by the force of the current. Regular currents of the gas may be conveyed away through the "upcast" shaft to the surface; and for months or years such have been known to pour forth hundreds or thousands of hogsheads of fire-damp per minute. The great danger is from the sudden opening of the pent-up reservoirs, holding under great pressure immense bodies of gas disseminated through large areas of coal, or collected in workings long since abandoned. An old working of this nature, filled with waste and fallen fragments, is called a goaf. In some of the collieries a single one of these covers near 100 acres of surface, and of course accumulates great quantities of gas. When such bodies are inflamed, the whole atmosphere of that portion of the mine explodes, and the coal dust floating through the passages is ignited. The mine is like the interior of a fiery furnace; the flames rush through the passages, causing repeated explosions; they rush up the shafts as if issuing from the crater of a volcano. The subterranean walls are shaken as if by an earthquake; movable things, as men, horses, and coal wagons, are hurled through the levels and shot upward through the shafts. Clouds of dust and smoke are poured forth, filling the air above and obscuring the light of the sun. The miners

in the more distant workings, their lights blown out by the force of the explosion, hasten through the dark passages, encumbered with unaccustomed heaps of rubbish, toward the nearest shaft. Some wander into uncertain alleys, dreading the pestilential choke-damp, which spreads through the mine after these explosions. It overtakes them, and the wretched beings, feeling its power, cease to struggle with their inevitable doom, and, deliberately assuming the posture of repose, fall asleep in death. The attention of the ablest scientific and practical men has long been directed to discovering means of preventing these awful explosions. Sir Humphry Davy's safety lamp, as contrived by him and modified by others, is still in use, and has no doubt been of most valuable service. But the miners themselves are so stupidly reckless, that no protection of this nature can be depended upon. Many of them cannot refrain, though forbidden by the most stringent regulations, from smoking their pipes in the midst of these dangers, and they have been known even to contrive to light them from the safety lamp itself. Prof. Faraday, while investigating this subject in the mine, and waiting for a blast to be put off, found, when the powder was wanted, that he was sitting upon the cask of it among the workmen with a lighted candle in his hand. This distinguished man stated that the more he pursued his inquiries into the means of preventing these accidents, the more he was disheartened at the apparent hopelessness of finding out any good general remedy. The safety lamp in careful hands is a sure guard against flame being communicated through the wire gauze to the fire-damp without; and moreover, by the change of color in the flame, and this leaving the wick and glimmering only in the upper part of the gauze cylinder, the lamp serves to warn the miner of the presence of dangerous gases. Thorough ventilation, however, is regarded as the greatest protection; but this too, when large currents of air are to be made to circulate through the complicated passages of an extensive mine, often to a distance of several miles, is dependent upon the care and attention of many workmen. The power which sets these currents in motion is the tendency of heated air to ascend. A fire is made, usually near the bottom of one of the shafts, which is called the upcast shaft, and the air for feeding it is drawn from the lower part of the mine. This is replaced by fresh air introduced through another shaft, called the downcast, and made to traverse in its circuit all the passages of the mine. Various mechanical contrivances have also been devised to produce the same effect. In a mine with but one shaft, this is divided by an air-tight partition into an upcast and a downcast, and partitions across the passages below cause the air to pass to any and all desired points before it reaches the passage leading to the fire. Ingenious expedients are adopted to regulate these currents, and sometimes to cause only the air which has passed through the purer portions of the mine to feed the fire, lest, the more impure currents being inflamed, the explosions might follow back into the remotest workings. The partitions across the great gangways along which the coal is run to the shafts are furnished with doors, that are opened and shut again as each wagon is run through. Each of these trap doors is tended in many of the English collieries by a little boy, called a trapper, who squats upon his heels during all the working hours, which are sometimes 12, in a little hole scooped out in the wall, holding a string in his hand, with which he pulls open the door when he hears the corve (low coal car) coming. As it passes he lets the string go, and the door goes back. Some of the passages in which these children do this work, and also run or "hurry" the corves of coal, are only two feet high; some indeed still less, even as low as 18 inches; beds of coal, when of very good quality, being worth working when only of this thickness. In such places the youthful trappers sit alone and in the dark, often with a damp floor beneath them and exposed to drafts. "They are allowed no light, but sometimes a good-natured collier will bestow a small bit of candle on them as a treat. On one occasion, as I was passing a little trapper, he begged me for a little grease from my candle. I found that the poor child had scooped out a hole in a great stone, and having obtained a wick, had manufactured a rude sort of lamp; and that he kept it going as well as he could by begging contributions of melted tallow from the candles of any Samaritan passers-by. To be in the dark, in fact, seemed to be the great grievance with all of them. Occasionally they are so posted as to be near the shaft, where they can sometimes run and enliven themselves with a view of the corves going up with the coals, or perhaps occasionally with a bird's-eye peep at the daylight itself; their main amusement is that, however, of seeing the corves pass along the gates at their posts." (Report of J. C. Symonds, Esq.) Numerous reports made at different times to the British parliament, and to various associations, have brought to public notice the severe privations incurred by the coal miners, and especially by the children, girls as well as boys. Many of these hardships have in consequence been greatly mitigated, and the employment of girls and women in mines is forbidden. —The wages received by the "getter" or miner in the English collieries are from ½d. to 1d. per cwt. of coal, out of which he pays his "marrows," or boys who do the hurrying. He can thus clear about 8s. per day, which is about half what miners expect to make in the United States. The labor employed in handling the coal and in surface work is also of more expensive kind in this country. Underground work is not necessarily more severe or disagreeable than much that is done upon the surface. Miners generally dislike "coming up to grass" for a job. Below, they work more independently, after their own way, frequently "on tribute" (shares); and in a dry, ventilated mine, they are protected from mes of weather, and if temperate are as hv as any class. There is, moreover, an nt in the uncertainty of the results, has a charm for the miner, though he ve no share in them. Even the dangers eir attractions. Their hours of work, by their own choice, are in many mines those of ordinary day laborers; it is least in the United States. When work- in wet places, it has been the custom to ; 8 hours a day's work; 10 is the ordinary owance. In England and Scotland it was ormerly the practice in some mines to keep the ands underground as many as 14 to 16 hours ut of the 24; but we presume this is nowhere he case at present. Those familiar with min- ng in this country can, however, call to mind ny instances of men engaged upon a good ct equalling even the longer time named own choice. But in colleries where he of coal are thin, ranging from 4 feet in to only 2 feet or less—where weary ys by ladders and cramped passages e made to and from work—where the ngs are badly ventilated, and the air, as often be seen, is thick with foul vapors, so a candle sheds little or no light at the dis- e of 5 yards, and must occasionally be in the air to be made to continue to where the water pours from the roof ain, and the floor is covered with it—the 's lot is then a hard one, though after all not so severe to full-grown men, not much exposed to dangers, cruel treatment, sufferings, as the life of a sailor.—In the h treatise by A. T. Ponson, civil and min- ngineer, may be found explanations of the ds adopted in Belgium, France, Germany, nd, for the mining of coal.

OL ATION, Line of, a straight line pass- hrough the centre of the object glass of a tel- pe, at right angles to the surface of the glass.

OLLIN, a northern co. of Texas, area 916 m., consisting mainly of forests and prairies; p. in 1856, 3,496, of whom 542 were slaves. Productions in 1850, 88,195 bushels of corn, ,684 of oats, and 59,475 lbs. of butter. Num- ber of pupils in the public schools, 278. Value f real estate in 1857, $1,039,360. Capital, Kinney. The county is intersected by the cted routes of the Memphis, El Paso, and . and of the Houston and Texas Central

IN, Kollin, Kolin, or Neu Kolin, a town of Bohemia, on the Elbe, not far from Pr , pop. about 6,000, memorable for the of Frederic the Great by the Austrians er Gen. Daun, June 18, 1757. The town built, defended by a wall, and stands summit of a lofty rock. It contains a andsome Gothic church, and an old castle sur- rounded by fine gardens and still inhabited. In he neighborhood are found carnelians, garnets, topazes, and other precious stones.

COLLIN, Heinrich Joseph von, a German dramatic poet, born in Vienna, Dec. 26, 1772, died there, July 28, 1811. His works (6 vols. Vienna, 1812–'14) comprise plays and poetry, which are highly valued in Germany.—Matthäus von, brother of the preceding, preceptor of the duke of Reichstadt, born March 8, 1779, died Nov. 23, 1826, wrote several tragedies of great merit, which are contained in his *Dramatische Dichtungen* (Pesth, 1815–'17, 4 vols.). His *Nachgelassene Gedichte* were edited by J. von Hammer (2 vols. Vienna, 1829), with a biographical notice.

COLLINGWOOD, Cuthbert, lord, an English admiral, son of a merchant of Newcastle-on-Tyne, born there, Sept. 26, 1750, died while cruising off Minorca, March 7, 1810. He first went to sea at the age of 11, as midshipman on board the Shannon, under Captain, afterward Admiral Brathwaite. After some years afloat he made a cruise under Admiral Roddam, and thence was transferred to Graves's fleet acting against the Americans. The Preston, on board of which was young Collingwood, reached Boston in 1774. On the day of Bunker hill he was appointed 4th lieutenant of the Somerset, and placed in charge of a party of marines who kept open communication between the troops and the ships. Next year he was given command of the sloop Hornet, with which he went to Jamaica, where he renewed acquaintance with the friend of his boyhood, Horatio Nelson, then lieutenant of the Lowestoffe. The career of these eminent men was closely united during the rest of their lives. In 1780 Nelson, being in command of the Hinchinbroke, was ordered to conduct a boat expedition to the Pacific along the San Juan river and lakes Nicaragua and Leon. Nelson was prostrated by fever and sent home. Collingwood took his place. His robust constitution carried him through, but he buried 180 out of his 200 men. The expedition was found impracticable. In the succeeding year he was wrecked in the Pelican, 24 guns, on Morant keys, W. I. Thereafter he was transferred to the Samson, 74, in which he served till the peace, when, in 1783, he was sent with the frigate Mediator to reënforce the squadron employed in preventing the Americans from trading with the West India islands. On his release from that duty in 1786, he revisited his home at Newcastle, after an absence of 25 years. On the breaking out of the war with the French, he served on board the Barfleur, which bore a conspicuous part in Lord Howe's victory, June 1, 1794. In 1797 he was placed in command of the Excellent, 74, which he fought with effect in Jarvis's victory off Cape St. Vincent, Feb. 14 of that year. When Nelson heard that the Excellent was coming to reënforce him, he exclaimed: "That counts two!" In 1799 he was made rear-admiral of the white; in 1801, admiral of the red; and in 1804, of the blue. He was detailed in 1803 to watch the French fleet off Brest, which he did for nearly 2 years. His crowning achievement was at Trafalgar, Oct. 21, 1805, where he was 2d in command, and when Nelson fell, took the command and finished the day. For this service he received the thanks of parliament, with a peerage, and a pension for his family of £2,000 per annum. His subsequent career was a succession of semi-political missions to the Mediterranean, which taxed his endurance and skill to the utmost. He repeatedly requested leave to retire, but the government informed him they could not spare his services. Worn out at length, he died at sea, as above stated. His remains were brought home and deposited in St. Paul's cathedral, near Nelson's. Selections from his despatches and correspondence were published at London, 1828, by G. L. N. Collingwood.

COLLINI, Cosmo Alessandro, an Italian scholar, born in Florence, Oct. 14, 1727, died in Mannheim, Germany, Oct. 14, 1806. On visiting Berlin in the middle of last century, he met Voltaire, and became his private secretary. Afterward he officiated as secretary and historiographer of the elector palatine of Bavaria, Karl Theodor; wrote a history of the Rhenish palatinate, and several other mostly scientific works, one of which, entitled *Mon séjour auprès de Voltaire*, &c., appeared after his death; at the time of which he was director of the cabinet of natural history of Mannheim.

COLLINS, Anthony, an English philosophical and sceptical writer, born at Heston, Middlesex, June 21, 1676, died in London, Dec. 13, 1729. He was educated at Eton and at King's college, Cambridge, and was afterward entered a student in the Temple at London, but applied himself chiefly to literary studies. In 1703 he began a correspondence with Mr. Locke, who cherished an enthusiastic affection for him, admiring in him "as much of the love of truth for truth's sake as ever he met with in anybody." In 1707 he published a treatise concerning the use of reason in propositions depending on human testimony, and in the same year engaged in the controversy between Dodwell and Dr. Samuel Clarke concerning the natural immortality of the soul. In 1709 he published "Priestcraft in Perfection," assailing the 20th article of the church of England, which affirms the power of the church to decree rites and ceremonies and to determine controversies of faith. Numerous answers were written to this work, the most noted of which was by Dr. Bennet, to which Collins replied in his "Essay on the Thirty-nine Articles." He advocated the necessitarian scheme in his "Vindication of the Divine Attributes" in 1710, which views he developed more fully in 1715 in his "Philosophical Inquiry concerning Liberty and Necessity." Though he endeavors to prove that man is a necessary agent morally as a clock is physically, he yet does not deny the power in man of doing as he wills and pleases; and in several of his views he anticipated Dr. Jonathan Edwards, the ablest subsequent champion of necessity. In answer to his opinions Dr. Clarke published in a tract one of the most important of his metaphysical arguments. In 1711 Collins resided in Holland, where in the society of Le Clerc and others he matured his "Discourse on Free Thinking," which was published on his return in 1713, and excited much animadversion. Its aim was to show that in all ages the most intellectual men and most admirable characters have been free thinkers, relying rather on philosophical thought than established opinion. The most remarkable of the numerous answers to it were by Bentley in England and Crousaz in France. In 1715 he became treasurer of the county of Essex, and soon after published his "Grounds and Reasons of the Christian Religion," maintaining that though Christianity is founded upon Judaism and the assertions of the New Testament proved in part by propositions from the Old, yet there is nothing in the latter which has a direct or other than a typical or allegorical bearing upon any thing in the former. Within 2 years 35 answers appeared to this work, among others, by Whiston and Doctors Clarke, Sykes, and Sherlock; to which Collins replied finally in his "Scheme of Literal Prophecy." His last work was written in 1727, in reply to 8 sermons by Dr. Rogers on the necessity of a divine revelation. Collins was a subtle and ingenious rather than a profound writer, and his works were highly valued by the more moderate followers of Locke both in England and France, who veiled their materialism beneath a respect for religion. His personal amiability was remarked even by his opponents, and his large and very curious library was open to all men of letters. His death was caused by a violent attack of the stone.

COLLINS, Isaac, an American printer and publisher, born in Delaware, Feb. 16, 1746, died at Burlington, N. J., March 21, 1817. His father emigrated to the United States from Bristol, England. Collins served an apprenticeship to the printing business, and at its completion went to Philadelphia, where he worked 18 months as a journeyman. At the expiration of this time he went into partnership with Joseph Cruikshank. In 1770 he removed to Burlington, N. J., having been chosen colonial printer to George III. Here he married and became the father of 14 children. In 1771 he commenced printing an almanac, and continued it for 20 years. He was also at this time the publisher of several other works. But on his removal to Trenton, N. J. (1778), he projected what was in the publishing business of that time a great enterprise, namely, the publication of an octavo family Bible. In order to secure the utmost accuracy in the typography, the whole was subjected to 11 proof-readings, the last of which was by his daughter Rebecca. So free from errors was this edition of the Scriptures, that it became at once the standard for all critical appeal, when the English translation alone was concerned. In 1796 Mr. Collins removed to New York, and in 1808 returned to Burlington. His children not only followed the religious sentiments of their parents and united with the Friends, but the sons turned their attention and energies to the vocation of their father, and all over the land to-day thousands of books have the imprints of the various firms with which this generation of publishers have been connected.

COLLINS, **William**, an English poet, born at Chichester, Dec. 25, 1720, died there, June 12, 1756. He was destined for the church, and in 1733 was admitted a scholar at Winchester. In 1740 he stood first in the list of scholars to be entered at New college, Oxford, but no vacancy occurred, and this circumstance Dr. Johnson calls the original misfortune of his life. He became a commoner of Queen's college, whence he was transferred to Magdalen. While at Winchester school he had written his "Eclogues," which he printed in 1742. They appeared without his name, and attracted comparatively little notice. He took his bachelor's degree at Oxford in 1744, and soon left the university abruptly, repairing to London as a literary adventurer. Having no fixed purpose, little perseverance, and withal great impatience for distinction, he was for several years engaged in drawing up proposals for works which were never written, and destroying what little he wrote. He was much annoyed also by duns, and was at one time in the hands of bailiffs. He borrowed some money from a bookseller as an advance on a projected translation of Aristotle's Poetics; but having been left about £2,000 by his uncle, Colonel Martin, he repaid the publisher and thought no more of the translation. In 1746 Collins published his famous odes. He was at first much disappointed, however, in the reception of his productions, and died probably with little idea of the lasting celebrity they were destined to attain. The latter part of his life was passed in a state of insanity, with only occasional lucid periods, and for some time he was confined in a lunatic asylum.

COLLINS, **William**, an English painter of rural life and coast scenery, born in London, Sept. 18, 1787, died Feb. 17, 1847. His earliest ideas in painting were derived from watching the process by which Morland executed his animal pieces. In 1807 he studied at the royal academy, and from that time until his death, with the exception of 2 years spent in Italy, never omitted to send pictures to the annual exhibitions. In 1820 he was elected an academician. In 1836 he went to Italy, and after an absence of 2 years made an unsuccessful appearance at the academy exhibitions as a historical painter. Many of his pictures have been engraved, as "Prawn Fishers at Hastings," "Happy as a King," the "Shrimpers—Evening," the "Fisherman's Widow," &c.—**William Wilkie**, eldest son of the preceding, an English novelist and essayist, born in London in Jan. 1824. After being educated at a private school, and spending 2 years with his parents in Italy, he was articled for 4 years to a firm in the tea trade. Exchanging commerce for law, he was a student in Lincoln's Inn at the time of his father's death; and his first literary performance was an admirable biography of his father, with selections from his journals and correspondence, published in 1848. He devoted himself from this time entirely to literature, and published successively between 1850 and 1854, "Antonina, or the Fall of Rome," "Rambles beyond Railways, or Notes in Cornwall," "Basil," "Mr. Wray's Cash Box," and "Hide and Seek." He soon after became a contributor to "Household Words," and his "After Dark" (1856), and the "Dead Secret" (1857), are reprints of tales which appeared originally in that periodical. He has also written voluminously, but anonymously, for other magazines and journals. He is the author of 2 dramas, the "Lighthouse" and the "Frozen Deep," both of which were first brought out at the private theatricals of Tavistock house, Mr. Dickens being one of the performers. The latter was also played with the same cast at the gallery of illustration for the benefit of the "Jerrold Fund," and the former was produced with success in 1857 at the Olympic theatre. His most esteemed novel is "Antonina," which has been translated into German. A complete American edition of his works, from a Boston publisher, is announced (1858).—**Charles Allston**, brother of the preceding, born about 1822, has acquired some repute as a painter of the Pre-Raphaelite school.

COLLINSON, **Peter**, an English botanist, born at Hugall Hall, in Westmoreland, in 1693, died in 1768. A member of the society of Friends, and pressed by his business as a merchant in London, he yet found time for studies in natural history, which gained him the acquaintance and correspondence of the most eminent naturalists of the time. He was the means of first drawing Franklin's attention to electricity, and one of the objects of Linnæus in visiting England in 1736 was to make his personal acquaintance. He gave especial attention to botany, and to the naturalization of plants and trees in regions remote from their original habitats. He sent over to Maryland, Pennsylvania, and other Atlantic states, many foreign ornamental shrubs, which found in America a congenial soil and climate; and he introduced into England many American forest trees. He was one of the first to suggest the culture of the grape in Virginia. A genus of labiate plants is named *Collinsonia* from him. He was also familiar with the antiquities of England, and read many interesting papers before the society of antiquaries.

COLLODION, **Collodium**. When gun-cotton is dissolved in ether mixed with a little alcohol, it forms a clear, colorless liquid, of the consistency of sirup. The proportions recommended are, prepared cotton 8 parts by weight, rectified ether 125 parts, and rectified alcohol 8 parts. The presence of water in the alcohol and ether is to be carefully avoided. The cotton is to be agitated in a bottle with the ether a few minutes, when the alcohol may be added, and the shaking continued. The sirupy product is to be strained through a cloth, and the liquid kept in a tight bottle. It is very volatile, and on evaporating leaves a film which adheres with extraordinary tenacity to the surface of bodies. This property makes it a convenient application to cuts and wounds in the place of sticking plaster, either by brushing it alone over the edges of the incision, or by spreading it upon strips of linen. It was first applied to this use by Dr. J. Parker Maynard, of Boston. The collodion is best prepared from gun-cotton made by the process of Professor Ellet. Gun-cotton made by steeping the fibre in nitric acid does not always dissolve in ether and alcohol. Prof. Ellet's, being always soluble, is preferred for this purpose, prepared as follows: 8½ fluid oz. of sulphuric acid are added to 10 oz. of nitrate of potassa, mixed, and triturated in a mortar; ¼ oz. of fine clean cotton is then thoroughly stirred into the mixture for about 4 minutes; the free acid is next removed by washing in water till all traces of it disappear. The gun-cotton being opened by picking, and dried at a gentle heat, is dissolved in 2¼ pints of ether already mixed with a fluid ounce of alcohol. The solution is to be strained, and kept in closely stopped bottles previously well dried. A similar method is given by Lauras, and the cotton, which he calls *xyloidin*, produces by his process a quality of collodion possessing elasticity and suppleness, which adapt it for application to the skin, especially on the articulations where freedom of motion is an important object. To a mixture of 300 grammes of sulphuric acid of sp. gr. 1.847, and 200 grammes of dry nitrate of potassa, he adds 10 grammes of carded cotton. After being in contact 12 minutes the cotton is taken out and washed with cold water, rinsing it 2 or 3 times. It is then immersed in a solution of 30 grms. of carb. potassa to 100 of water, again well washed with water and dried at 77° to 86° F. Of this *xyloidin* 8 grms. are placed in a flask with 125 of ordinary ether, and 8 grms. of alcohol are added of sp. gr. .825. The mixture is to be well agitated and then combined with a preparation of Venice turpentine 2 grms., castor oil 2 grms., and white wax 2 grms., to which, after being heated, 6 grms. of ether has been added. Collodion was first applied to photographic purposes in 1851, by Mr. Archer of England. It is used as a menstruum for affixing to a glass plate a film of some iodide, as of potassium, ammonia, or cadmium, a solution of which is mixed with it.

COLLOMBET, François Zénon, a French author, born at Sièges, March 28, 1808, died in Lyons, Oct. 16, 1853. He studied theology, but never received orders. His earlier works, among which were a "Life of Saint Theresa," and a "Civil and Religious History of Latin Literature in the 4th and 5th Centuries," were prepared in concert with Grégoire. His first work published separately was a "History of Saint Jerome" (2 vols. 1844), which was received with great favor. Among his later publications are: "Historical Researches on the Church and Convent of the Dominicans at Lyons from 1218 to 1789;" a "Critical History of the Suppression of the Jesuits;" "Studies on Châteaubriand;" and a review of the religious opinions and political changes of Villemain. He also furnished articles for Feller's *Dictionnaire historique*, and for the *Biographie universelle*. His personal character was most estimable, and he was an indefatigable and learned defender of Catholicism.

COLLOREDO, a noble Austrian family, originating in the 10th century, and taking their name from the castle of Colloredo in Friuli. One branch (Colloredo-Mannsfeld) rank as princes of the empire. The following are the prominent names of the house: Johann Baptist, Count Waldsee, who was invited in 1648, by the republic of Venice, to take command of her forces in Candia, the capital of which island he defended with great valor against the Turks. He died on the battle-field, Oct. 1649.—Franz Gundaccar, born May 28, 1731, died Oct. 27, 1807, officiated as vice-chancellor of the German empire, till its close in 1806.—Joseph (of Melse und Waldsee), brother of the preceding, born at Ratisbon, Sept. 11, 1735, died Nov. 26, 1818, was field marshal, and reorganized the artillery, proving its efficiency by the taking of Belgrade. In his later years he was minister of state and of war. The emperor Francis dedicated a monument to his memory in the arsenal at Venice.—Franz, born in 1737, died March 10, 1806, stood high in the councils of Francis II., but retired from public affairs after the battle of Austerlitz.—Wenzel Joseph, born in Vienna in 1738, died Sept. 4, 1822, commanded the Austrian army of Italy in 1813.—Hieronymus (Mannsfeld), born at Wetzlar, March 30, 1775, died in 1822, field marshal, commanded the first division of the Austrian army, and contributed much toward the victory at Culm.—Rudolf Joseph, born in 1772, died Dec. 28, 1843, head of the family of Colloredo, councillor of state, died without issue, and was succeeded by his nephew, Franz de Paula Gundaccar, born in Vienna, Nov. 8, 1802, died May 28, 1852, who took a part in the Hungarian campaign, at the battle of Kapolna and before Comorn.—The present head of the house of Colloredo-Mannsfeld is the cousin of the preceding, Prince Joseph Franz Hieronymus, born Feb. 26, 1813, who resides in Vienna, and holds the offices of chamberlain and major in the Austrian army. The prospective heir to the title is his eldest son, Hieronymus Ferdinand Rudolf, count of Mannsfeld, born July 20, 1842.

COLLOT D'HERBOIS, Jean Marie, a member of the French convention, born in Paris in 1750, died in Cayenne, Jan. 8, 1796. After having been an actor, he became a conspicuous member of the revolutionary party. June 13, 1793, he was made presiding officer of the convention, and 4 months later entered the committee of public safety, where he advocated the most violent measures. In concert with Fouché he was sent to Lyons, which city had rebelled against the convention, and his proceedings there, marked by the most revolting cruelty, increased his influence with the terrorists in Paris. From a devoted follower of Robespierre he afterward became his strenuous opponent; but finally his growing influence with the pop-lace gave umbrage to the ruling faction, and e was transported to Cayenne, where he died. wing to his intemperate habits he was ironially called *le sobre Collot.* He was the author f many plays, but his ablest production was *'almanach du père Gérard,* which, appearing n 1792, and defending the new revolutionary rder of things, met with great success, was ranslated into several languages, and won a rize offered by the Jacobins.

COLMAN, BENJAMIN, an American clergyman, born in Boston, Oct. 19, 1673, died there, . 29, 1747. In June, 1692, he was gradted at Harvard college, and not long afterard began to preach. He embarked for Engand in 1695, but the vessel in which he sailed as captured by a French privateer, and he was arried to France as a prisoner. Being exchangd soon after, he passed over to England, where remained until 1699, preaching in different es. In that year, having accepted an invi to become pastor of a society just formed le street, Boston, he returned to Amer ered upon his new duties. Of this so remained pastor until his death. In 1724 was chosen president of Harvard college, h office he however declined, and in 1731 eived the degree of D.D. from the univer Glasgow. He published many sermons, poems, and a tract in favor of inocula for the small pox.

LMAN, GEORGE, the elder, an English omic dramatist, born about 1733, at Florence, is father being British resident at the court of uscany, died at Paddington, Aug. 14, 1794. fter receiving his early education at Westminster school, he became a student at Christ hurch college, Oxford, where he gained repute or his lively wit, and united with Mr. Bonnel hornton in publishing a weekly periodical alled the "Connoisseur," which they supportd from Jan. 1754, to Sept. 1756, and several f the papers in which delineated the manners f the time with admirable humor. He reed his master's degree at Oxford, studied at Lincoln's Inn, London, and was admit to the bar; but devoted himself only to iterary, especially dramatic, pursuits. He had roduced 2 successful pieces, "Polly Honeyomb" and the "Jealous Wife," the latter ounded on Fielding's "Tom Jones," when at he death of his uncle, Lord Bath, he came into ossession of a handsome fortune. In 1766 he d with Garrick in writing the "Clandes rriage," the principal character of an aged beau affecting youth and ty; and in 1767 he united with 3 others in chasing Covent Garden theatre, of which he acting manager for 7 years. In 1777 he hased of Mr. Samuel Foote the Haymar theatre, which he managed energetically, ing it with original or translated pieces, aging the best actors. He was the hor of more than 30 dramatic pieces, a few which still keep possession of the stage. He lso had reputation for classical scholarship, and made a translation of the comedies of Terence, and also of Horace's "Art of Poetry," to which he prefixed an ingenious hypothesis that the design of Horace was to dissuade one of the sons of Piso from publishing a poem which he was meditating. A paralytic stroke in 1790 resulted in his mental derangement, and he was removed to a lunatic asylum at Paddington.—GEORGE, the younger, son of the preceding, dramatic author and wit, born Oct. 21, 1762, died Oct. 26, 1836. In 1785, in consequence of the illness of his father, he assumed the management of the Haymarket theatre, which post he held for a long time. In the latter part of his life he officiated as examiner of plays. Mr. Colman was highly distinguished as a wit, and divided with Sheridan the admiration of the London circles. Byron said of them: "Sheridan for dinner, and Colman for supper." He wrote "John Bull," the "Iron Chest," the "Poor Gentleman," and other plays, many of which, especially the last, still retain their popularity. He also wrote "Broad Grins," "Poetical Vagaries," &c., and various small poems.

COLMAN, HENRY, an American clergyman and writer on agriculture, born in Boston, Sept. 12, 1785, died in London, Aug. 14, 1849. He was graduated at Dartmouth college in 1805, and ordained minister of the 2d Congregational church at Hingham, Mass., in 1807, remaining there until 1820. From 1825 to 1831 he officiated as pastor of a new Unitarian society in Salem, and afterward removed to Deerfield, Mass., where he devoted himself to agricultural pursuits. He was appointed agricultural commissioner of the state of Massachusetts, and after passing considerable time in making a tour of inspection in that state, and in preparing several reports, he spent 6 years, from 1842 to 1848, in Europe. The results of his observations during this time were published after his return in his "Agricultural and Rural Economy of France, Belgium, Holland, and Switzerland," "European Agriculture and Rural Economy," and "European Life and Manners, in Letters to Friends." In 1849 he revisited Europe, in the hope of benefiting his health, but died soon after his arrival in England.

COLMAR (anc. *Columbaria*), capital of the French arrondissement of the same name, and of the department of Haut-Rhin, near the foot of the Vosges mountains, on the Lauch and the Fecht rivers, both tributaries of the Ill, a feeder of the Rhine, on the railway from Strasbourg to Basel, 39¼ m. from the former, and 49¼ m. from the latter city; pop. of the arrondissement in 1856, 208,829, and of the town, 21,284. The annual value of the goods manufactured in the arrondissement is estimated at about $10,000,000, Colmar being one of the chief seats of cotton manufacture in France, and possessing also various other manufactures. The principal factory for cotton prints employs about 1,200 persons. The town is the seat of the provincial government and courts of law, possesses normal schools for teachers, a college, an imperial lyceum, a public library with 40,000 vols., a Bible and a literary society, a civil and military hospital, a theatre, 4 synagogues, a Protestant church, and several Catholic churches. The cathedral is a Gothic edifice of the 14th century, containing a remarkable painting of Martin Schön, who was a native of Colmar. Gen. Rapp was also born there, and a monument has recently been erected to his memory. Colmar was made a free imperial city in the 13th century, figured conspicuously in the civil wars under Rudolf von Hapsburg and Adolf von Nassau, was taken by the Swedes in 1632, and later by the French, returned for a time to imperial allegiance, but was retaken by Louis XIV., and annexed to France in 1697 by the treaty of Ryswick.

COLOCOTRONIS, Theodoros, a modern Greek general, born in Messenia, April 3, 1770, died in Athens, Feb. 4, 1843. His father and grandfather both fell in the wars against Turkey, and Theodoros was habituated from his youth to the hardships of guerrilla warfare. In 1806 he was compelled to fly from the Morea, in order to escape the Turks, to whom his name had become a terror, and entered the military service of the Ionian islands. Immediately on the outbreak of the revolution in 1821, he landed in the Morea, and was soon at the head of a large band of Greeks. In the 2 following years he was actively engaged in the operations against the Turks, distinguished himself especially at the taking of Tripolitza and Corinth, and contributed greatly to the victory over Mahmoud Dramali in 1822. But instead of bending all his energies toward the achievement of Grecian independence, he engaged in quarrels with his brother chiefs, and at last proclaimed open war with the recognized government. He was unsuccessful in his revolt, however, and, having been defeated and taken prisoner, was confined on the island of Hydra. But the Grecian leaders were soon compelled to liberate him, and to place him at the head of affairs in the Morea, in order to satisfy the people of that part of Greece, among whom he was very popular, and to oppose the progress of Ibrahim Pasha. In 1827 he assisted to elect Capo d'Istria president of Greece, and was afterward confirmed by him in his command of the Morea. He was a member of the provisional government established after the assassination of that statesman in 1831. Opposed to the regency which was established during the minority of Otho, and detected in a conspiracy against that government, he was condemned to death in April, 1834. His punishment was, however, in consideration of the valuable services he had rendered the state, commuted to imprisonment for 20 years in the citadel of Nauplia, and Otho, on his accession to the throne in the following year, granted him a full pardon, restored him to his old rank as general, and bestowed on him the decoration of the order of the Saviour. From this time until his death he lived quietly at Athens, where he composed a history of Greece from 1770 to 1836, which was published.

COLOGNE (Ger. *Köln*), the fortified capital of the Prussian Rhenish provinces, and of the district of the same name (area 1,533 sq. m., pop. 500,000), on the left bank of the Rhine, connected with the town of Deutz on the opposite shore by a bridge of boats nearly 1,400 feet long, and by railway with the principal cities of the continent; pop. of Cologne and Deutz in 1855, 105,504, mostly Catholics. The city occupies the site of the ancient *Oppidum Ubiorum*, the chief town of the Ubii, which was founded about 37 B. C. The empress Agrippina was born here, and suggested to her husband Claudius to plant a colony in the town in 51 A. D., which was called *Colonia Agrippina* or *Agrippinensis*. Many ruins of this early period are still in existence. After having been in possession of the Franks, Cologne was incorporated in 870 with Germany, of which it became one of the most flourishing cities, especially during the 13th century, when it joined the Hanseatic league. But the banishment of the most thrifty Protestant and Jewish traders, the closing of the navigation of the Rhine by the Dutch in the 16th century, the rising maritime power of Holland and England, as well as political conflicts, combined to impair its prosperity. After [illegible], however, when the restrictions upon the navigation were removed, and especially by its direct communication with the Dutch ports and the growing importance of the Prussian manufactures, Cologne again began to give signs of commercial activity. The principal manufactories carried on within the town are those of the famous eau de Cologne, of which there are not less than 30, all pretending to possess the secret of the fabrication of this aromatic water. Tobacco manufactories, especially of snuff, are the next in importance, but sugar, paper, wax, soap, musical and optical instruments, and many other articles, also afford employment to many successful establishments. Cologne is the seat of an archbishopric founded in the 8th century, of the provincial authorities, and of courts of appeal. The university was suppressed in 1801 during the French occupation, and most of the ancient establishments connected with the order of the knights of Malta and kindred orders, and abbeys, nunneries, convents, &c., were closed. There are 37 public places, of which the *Heumarkt* and *Neumarkt* are the principal. Of the public buildings, the town hall, with its gallery of iron busts of the Hanseatic ambassadors, the *Gürzenich* or *Kaufhaus*, where the carnival festivities and the art union exhibitions take place, the house of the templars, now used as the exchange, the new synagogue, built by Zwirner in the oriental style at the expense of Mr. Adolph Oppenheim, the banker, and various other structures, arrest the attention of the visitor. But the most remarkable monuments of Cologne are the churches—St. Peter's, with the famous altarpiece representing the crucifixion of St. Peter, by Rubens, who pa-

it to this church, in which he was bap-
St. Pantaleon's, with the tomb of Theo-
. the empress of Otho II.; St. Ursula's, with
s of the 11,000 virgins in its "golden
;" St. Gereon's, with the remains of this
ind of the warriors of the Theban legion;
bert's, with an altar modelled after that
eter's at Rome; and above all, the cathe-
iating in 814 under Charlemagne, and
1162 became hallowed to pilgrims by
es of the three holy kings, which Frederic
brought from Milan. The foun-
new cathedral was laid in 1248
the site of the old one (which had been
yed by fire), under the auspices of Arch-
Conrad of Hochstedten; and, with occa-
uptions, the structure slowly ad-
ing the 13th, 14th, 15th, 16th, and
uries, when the 30 years' war, and
ecently the French occupation, again de-
the completion of the edifice, which to
ly remains unfinished. A fresh impetus
ven to the work on the accession of Fred-
illiam IV. of Prussia. A *Dombauverein*,
ciation for the construction of the ca-
l, as well as a journal in furtherance of
object, the *Domblatt*, was organized.
. 4, 1842, the foundation stone of the
was laid with great pomp. In Sept.
he 600th anniversary of the laying of the
ne by Archbishop Conrad of Hoch-
also celebrated with great popular
gs. In 9 years, from 1842 to 1851, the
s of the central committee amounted to
0,000 from private contributions and
0 from the Prussian government.
, 20 academical *Domvereine* (cathedral
, after the example given by the universi-
onn, have been started in the learned in-
of the Rhenish provinces, which raise
ons by lotteries, the gifts in books,
uted by the students, offering the basis
operation. In 1850 the ladies of Cologne
vicinity combined to furnish the upper
nd Louis, ex-king of Bavaria, presented 5
l windows; and the interest in the com-
of the cathedral, which has been power-
pported by the literary efforts of Friedrich
hlegel and the two Boisserées (the splen-
lustrated publication on the cathedral by
Boisserée being the best work on the
extant), is steadily increasing. The ca-
. is considered one of the finest Gothic
s in existence. Under a slab in the
the heart of Maria de' Medici is
and in the adjoining side chapels are
nts of the archbishop of Cologne and
iders of the cathedral, also the shrine
ree kings, adorned with gold and pre-
tones. The procrastination in the com-
of the work causes great confusion in
to the knowledge of the names of the
cts successively engaged on it, and the
l architect is unknown. A legend is
in Cologne, which attributes the pro-
ation to Satan, whose jealousy became excited by the vastness of the undertaking, and who vowed that it should never be completed. Maria de' Medici died in Cologne, in the same house (No. 10 Sternengasse) in which Rubens was born. The first stone for a permanent bridge over the Rhine at Cologne for railway and general traffic was laid in 1855. In 1858 was announced to be published, in 5 volumes, at the expense of the town, *Codex Diplomaticus Coloniensis*, being a historical record of the archives of Cologne. The *Kölnische Zeitung* is one of the most influential papers of Germany.

COLOGNE WATER. See **Eau de Cologne.**

COLOMB, Paul de Batines, a French writer on Dante, born in 1812, died Jan. 14, 1855, spent a great part of his life in Italy, particularly in Florence, where he wrote several works in the Italian language, and among others, *Bibliografia Dantesca*, and *Studii inediti su Dante.*

COLOMBAT de l'Isère, a French physician, born about 1800 at Vienne, on the Isère river. Many years since he established at Paris a hospital for the cure of stammerers, and such was the success of his mode of treatment, that in a short time he restored the power of speech to 500 sufferers. His method consists mainly in requiring the patient to repeat a great many times certain phrases in a peculiar rhythmical measure, at the same time paying strict attention to the muscles employed in doing this. He published a number of works on this subject, which gained for him the Monthyon prize of 5,000 francs.

COLOMBIA, Republic of, now dismembered, so named in honor of Columbus, comprised the Spanish viceroyalty of New Granada and Quito, with the captain-generalcy of Venezuela. The republic lay between lat. 12° 25′ N. and 6° 15′ S., long. 60° and 82° W., being bounded N. by the Caribbean sea, E. by the Atlantic, S. E. by Brazil and British Guiana, S. W. by Peru, W. by the Pacific, and contained, with a coast line of 3,000 m., 1,155,000 sq. m., having, at the date of its dismemberment, nearly 3,000,000 inhabitants, exclusive of 200,000 Indians. The republic was divided into 12 departments, with a federal capital at Bogota, namely: Apure, Assuay, Boyaca, Cauca, Cundinamarca, Ecuador, Guayaquil, Magdalena, Orinoco, Panama, Venezuela, and Zulia. It owed its origin to the struggles of the northern states of South America to throw off the Spanish yoke, and "the republic of Colombia," comprising New Granada and Venezuela, was proclaimed by Bolivar in 1819. The Colombian congress assembled, Jan. 1821, at Cucuta, and promulgated a federal constitution, Aug. 30 of the same year. The republic, however, was rent by intestine factions, and in Nov. 1831, a year after the death of Bolivar, it was finally split into the 3 independent republics of Venezuela, New Granada, and Ecuador.

COLOMBO, or Columbo, the seat of government and principal seaport of Ceylon, consists of an open and a fortified town on the W. coast of the island; pop. 31,549. The fortified town stands on a rocky peninsula, jutting out into the sea, and having on the land side a lake, a moat, and drawbridges. The interior presents more of the appearance of a European town than any other place in India, except Goa. The houses are built after a plain Dutch fashion, and many of the streets are shaded by trees. It is the residence of the civil and military authorities and of most of the European families of Ceylon. The climate is humid, but salubrious. Temperature in winter, about 79.1°; in summer, 80.9° F. East of this portion of Colombo lies the open town, which is inhabited by a mixed population of Dutch and Portuguese descent. The suburbs are peopled by native Cingalese. Principal edifices, the government house, court house, English, Dutch, and Portuguese churches, chapels, barracks, a military hospital, and a lighthouse. There are various museums, schools, hotels, and libraries. The harbor, which is small, is defended by several forts. The roadstead is safe only during the S. E. monsoon. Colombo is the entrepot for most of the foreign trade of Ceylon, and has a number of commercial houses. (See CEYLON.) The town was occupied by the Portuguese in 1517, taken by the Dutch in 1603, and by the English in 1796. The Natande canal from Colombo to Putlam was opened Sept. 23, 1856, and the opening of the first railroad in Ceylon was celebrated with great pomp at Colombo in 1858.

COLON. See ASPINWALL.

COLON, the portion of the large intestine extending from the cæcum to the rectum, from the right to the left iliac region. It is divided into 4 portions: the ascending colon, on the right side, from the cæcum to the edge of the ribs; the transverse, or arch of the colon, from one hypochondrium to the other, below the stomach and above the small intestine; the descending colon on the left side; and the sigmoid flexure, in the shape of the letter S, in the left iliac region, terminating in the rectum or last portion of the intestine. Along its course it presents prominences of its walls, interrupted by three fleshy longitudinal bands, and many fatty appendages formed in the folds of the peritoneum. The peritoneal or serous coat, after covering the intestine, fixes it loosely to the vertebral column by the folds called mesocolon; the muscular coat consists of both circular and longitudinal bands, as in the cæcum; the mucous coat presents a great number of mucous follicles. The arteries of the large intestine are derived from the superior and inferior mesenteric, proceeding directly from the aorta; the veins open into the portal vein of the liver; the nerves are furnished by branches of the solar plexus. The colon in man will average from 4 to 5½ feet in length, and about 2 inches in diameter, being about a quarter as long and twice as wide as the small intestine; though the capacity is nearly the same, the absorbing surface is scarcely half that of the smaller tube, and this difference is increased by the absence of folds in the large intestine. The ascending colon lies upon the right kidney and quadratus lumborum muscle; above it is the duodenum, and in front the folds of the small intestine; the descending portion is on the left kidney and corresponding muscle, and is also covered by the small intestine. The sigmoid flexure is generally in contact with the abdominal walls, though, from its freedom of movement, it may assume a variety of curvature and position; its object is evidently to retain the fæces, and relieve the rectum and sphincter from their constant and inconvenient weight. The whole colon is very liable to displacement by the pressure of its own accumulated contents, by tumors from within, and by corsets and other articles of dress from without. It retains its sacculated shape throughout, but very gradually decreases in size toward the rectum; the fatty appendages (*appendices epiploicæ*) appear to be small reservoirs of fatty matter, and are sometimes greatly increased in cases of remarkable obesity. After the food has passed the cæcum, little is left but excrementitious matter, which collects in the sacs of the colon, the forms of which it assumes and preserves even after having passed through the rectum; when, from want of tone in the bowel, or other causes, the fæces are delayed in these sacs, they often acquire extreme hardness and roundness, causing painful and even dangerous symptoms. Like the rest of the intestine, the colon is subject to inflammation, ulceration, and other diseases of mucous membranes; it is also the seat of dysentery. The colon is separated from the small intestine in fishes by a slight constriction; this is the case with most reptiles. In birds, the short and straight large intestine is continued from the small without a distinct separating valve, and ends in a cloaca common to the digestive, urinary, and generative organs. In mammals there is generally a well marked colon, though in some of the edentata there is no distinction between large and small intestine; in carnivora it is short, wide, and cylindrical; in the herbivora, long and sacculated; in the horse, whose intestines are 10 times as long as the body, the colon has a length of 19 feet, much curved and sacculated, and the lower portion attached loosely by a very long mesocolon; in rodents it is not much larger in diameter than the small intestine, but is provided with deep sacs; in the monotremata it gradually increases in size to the rectum; in the monkeys it is very similar to that of man. The movements of the colon are due to the contraction of the muscles of its walls, stimulated by its contents; they are independent of the nervous centres, though they may be influenced by stimuli acting on the sympathetic and spinal systems of nerves.

COLONEL, the chief commander of a regiment either of cavalry, infantry, or artillery, holding rank between a brigadier-general and lieutenant-colonel.

COLONIZATION SOCIETY. The American colonization society seems to have had its origin in the efforts of the Rev. Samuel Hopkins,

f Newport, R. I., for the prevention of
ve trade and the abolition of slavery in
Island. Dr. Hopkins was settled at
rt in 1770, and very soon commenced his
on the slave trade, at that time prose-
xtensively from that port. In 1773, he
on the Rev. Dr. Stiles, then pastor of a
in Newport, and afterward president of
llege, to converse with him relative to the
on of some young colored men of prom-
om he was desirous of sending as mis-
o Guinea, in connection with a com-
50 people of color, who might
uy on the western coast of Africa.
men were educated for the minis-
ice of his exertions, by assist-
from churches in Massachusetts,
and New York, and donations from
urgh society for the promotion of
wledge, and from friends in Lon-
revolutionary war prevented the
of Dr. Hopkins's design for the time,
peace he again recurred to it. In
to Moses Brown, he says: "There
oposal on foot some time, that a
blacks should return to Africa and
. . . . In order to this, a num-
be thought best qualified for the
first be sent to Africa, to treat
of the nations there, and request of
a, proper and sufficient for them, and
as shall go with them, to settle upon."
years before the settlement of Sierra
a year before Clarkson's prize essay
n. In 1787, a month before the first
ra Leone set sail, he wrote again
Brown, introducing Dr. William Thorn-
o was desirous "to establish a settle-
f free blacks in Africa;" "a plan which,"
"you know I have been for years de-
n seeing attempted." Dr. Thornton did
ceed in raising sufficient funds for his
hropic enterprise, and the British settle-
as made that year, but met with some
s at first. In 1789, Dr. Hopkins address-
o Granville Sharp, inquiring wheth-
of free blacks from America could
rra Leone and receive grants of land,
er the character, government, &c.,
colony were such that he should be jus-
n recommending such a course to them.
were then, he stated, a number of reli-
lacks who were ready to form a church
with one of their own number as pastor
le in Africa and carry civilization and
anity there. In 1791, he wished the
pation society of Connecticut to embrace
ct in their charter. In 1793, in the
to a sermon published that year, he
upon the legislatures of New England
y of making provision for aiding such
ation. The appeal was one of great elo-
and power, and shows that its author,
72 years of age, had lost none of the
d philanthropy of his youth. In 1795
96, he was in correspondence with Zachary Macaulay, the father of the eminent historian, then acting governor of Sierra Leone, in reference to his colony. In 1799, at the age of 78, he still urges the importance of the enterprise in his memoir of Mrs. Osborn. Two of the 3 young colored men, Salmar Nubia and Newport Gardner, educated through his efforts, survived him, and eventually, though at a very advanced age, went to Liberia. Mr. Jefferson and several other eminent Virginians entertained the idea of the colonization of emancipated Africans in some part of America, as early as 1776. In 1800–1805, an effort was made by them to colonize a large body of blacks, more or less implicated in the insurrection at Richmond in 1800, either in some portion of the United States or in Africa, and President Jefferson made application to the Sierra Leone company to receive them, but was refused. In 1810, Samuel J. Mills and other theological students at Andover, Mass., began to collect information concerning the colored people in the United States, slave and free, and were soon impressed with the necessity of taking some measures for their improvement. Mills was at first in favor of their colonization north of the Ohio, but his associates foresaw that the whites would soon overrun any colony on this continent. Ann Mifflin, a member of the society of Friends in Pennsylvania, addressed a letter to Mr. Jefferson in 1811, asking his views of colonization in Africa; to which he replied, expressing his warm approbation of the project. In 1815, Capt. Paul Cuffee, a colored man of New Bedford, carried 38 emigrants to Sierra Leone in his own vessel, and 30 of them at his own expense. His actual expenditure for this purpose was nearly $4,000. In 1815, the Rev. Dr. Finley of New Jersey, who had for some years taken a deep interest in the establishment of a society for African colonization, interested many of his friends, and especially Elias B. Caldwell, his brother-in-law, and Francis S. Key, an intimate friend, both residing in Washington, in the enterprise. In 1816, Gen. Charles F. Mercer, of the Virginia house of delegates, had been induced to investigate the subject, and had pledged himself if reëlected to bring it up in the Virginia legislature. In the autumn of 1816, the first meeting preparatory to the organization of a colonization society was held at Princeton, N. J., and was attended by most of the professors of the theological seminary and college. In December, Dr. Finley visited Washington, and on consultation with Messrs. Caldwell, Key, and others, it was resolved to call a public meeting. The meeting was held Dec. 28, the constitution of the "American Colonization Society" adopted Dec. 28, and the officers elected Jan. 1, 1817. Samuel J. Mills was one of the original members, and Dr. William Thornton one of the board of managers. Meantime Gen. Mercer had fulfilled his pledge, and a resolution drawn by him in favor of colonization passed the Virginia legislature, Dec. 23, 1816. The first public meeting of the colonization society after its organization was held in Dr. Finley's church,

and his earnest coöperation in all its measures was of great service in the infancy of the society. In 1817, through the zealous exertions of the Rev. Dr. (afterward Bishop) Meade and Gen. Mercer, the necessary funds were raised, and Samuel J. Mills and Ebenezer Burgess were sent to Africa to select a site for a colony. The place which they determined upon was Sherbro island or the coast adjacent, near the present location of the Mendi mission. On the return voyage, Mills died from an illness contracted before he left Africa. On Jan. 21, 1820, the society sent out its first company of colonists, 86 in number. After an unsuccessful attempt to settle on Sherbro island, in which many lives were lost, and an effort to purchase a locality in the Bassa country, which was defeated by the natives, who were unwilling to relinquish the slave trade, Cape Mesurado, some 300 m. south of Sierra Leone, was purchased, Dec. 15, 1821. A few colonists arrived Jan. 7, 1822, and were landed on a low island in the river, from which in April of the same year they removed to the cape, and laid the foundation of the city of Monrovia, and of the republic of Liberia. Among the early colonists, though not of the first company, was an intelligent colored man named Lott Cary, who had emancipated himself and family and had become distinguished as a preacher among his countrymen, in Richmond, Va. His energy and commanding talents dissuaded the colonists, enfeebled by disease and disheartened by their ill success, from abandoning Cape Mesurado, and becoming citizens of Sierra Leone. His talents were appreciated, and he became a few years later the acting agent of the society, when he lost his life by an accident in 1828. A nucleus having been formed, other emigrants were sent out to the number of over 200 in the 2 following years, and in the 7 years ending with 1828 about 1,000 colored people had been sent thither. Among these was a colored church sent from Boston in 1826, in which Salmar Nubia and Newport Gardner, the young men educated by Dr. Hopkins's exertions, went as deacons. Nubia was 70 and Gardner 80 years of age, but they desired to sanction the enterprise by their example. Both were natives of Africa. They died within 6 months after their arrival. In the promotion of emigration the colonial agent, Mr. Jehudi Ashmun, had labored with unwearied zeal, and it was a loss to the society not easily repaired, when he died in Aug. 1828, exhausted by severe toil in the deadly climate of Africa. The society was fortunate from the first in enlisting the aid of men of the highest ability, and the most eminent social and political position, in its measures. Its first president was Judge Bushrod Washington, one of the most eminent men of his day; and on his decease in 1829, he was succeeded by Charles Carroll of Carrollton, and he by ex-President Madison; at whose death Henry Clay was elected, and continued in office until his decease, when the present presiding officer, J. H. B. Latrobe, Esq., was chosen to fill the post. Among its long list of vice-presidents, too, may be found numerous men of eminence in the nation for the last 30 years. The receipts of the society, from its foundation to the commencement of the present year (1859), have been $1,390,939, while the receipts of its auxiliaries expended for colonization purposes have been about $400,000 more. They have sent out nearly 10,000 emigrants, of whom about ⅔ are probably now residents of Liberia. They have furnished to these emigrants provisions and temporary dwellings, and have aided the commerce and agriculture of the colony. In 1847, with the full and free consent of the society, Liberia became an independent republic; and during the year 1857 the Maryland colony, which had maintained a separate though friendly government, united with Liberia. In the early history of the colony the society was often greatly embarrassed by the sudden death of its agents, who, exposed to the hardships incident to a new settlement, and the anxieties of a position among hostile savages, and half educated, superstitious, and easily discouraged settlers, toiled beyond their strength and fell victims to a climate which has proved exceedingly fatal to whites, though generally favorable to the negro race. Its agents were repeatedly under the necessity of carrying on war against the native tribes, which, prompted by the slave traders, sought to destroy their colony, and the greatly increased expenditure which resulted from this necessity occasioned distrust of the wisdom of the colonial agents. Apart from these difficulties, they have had others to contend with, growing out of their position and objects. In the 2d article of the constitution of the society it is stated that "the object to which its attention shall be exclusively directed is to promote and execute a plan for colonizing, with their own consent, the free people of color residing in our country, in Africa, or such other place as congress shall deem expedient." It was objected by many of the people of the northern states, that constraint was used to compel the free colored people to emigrate in many instances, and that as natives of this country their action in the matter should be entirely free. In the southern states, on the other hand, large expectations had been formed that the colonization society would rid them of the free blacks, whose presence in a slave state is always regarded with distrust and dissatisfaction. This expectation has proved fallacious: the number of free blacks has increased, especially in the seaboard states, with great rapidity, and owing to circumstances beyond the control of the society the cost of placing a settler in Liberia has heretofore been inconveniently large. With their present facilities the cost is now very much reduced.

COLONNA, a small town in the states of the church, 13 m. E. of Rome, on the site of the celebrated Latin city of Labicum; pop. about 250. The ancient city was sacked by Coriolanus, and in the time of Cicero had become nearly opulated. The modern town is famous as seat of the princely house of the Colon-, with whose fortunes it was for a long time closely connected. It was seized by Boniface VIII. in 1297, by Rienzi in 1355, and in the 17th century passed into the hands of the Rossis, its present possessors. It is nearly all

ONNA, a princely family of Italy, origi- in the 11th century, now divided into the of Colonna-Paliano, Colonna-Stigliano, Colonna di Sciarra. Pope Martin V. (Or- Colonna), several personages who took a uous part in the contest between the s and the Ghibellines, and many other ers of this family, have a historical or lit- distinction. I. Fabrizio, lord high con- of Naples, died there in 1520, served in armies of France, and afterward in those of king of Aragon. In 1512 he was taken pris- at the battle of Ravenna by the duke of by whom he was treated with much ation. II. Prospero, an Italian gen- d in 1523. When Charles VIII. of invaded Italy, Prospero embraced his chiefly because the Ursini, the hered- enemies of his house, took the oppo- side. He afterward, however, changed and fought against France. At the battle ula Franca, in 1515, he was taken prisoner, having been restored to liberty, he again the field against the French, gained the of La Bicoque, and distinguished himself vigor of his operations, which were, ever, cut short by his death. III. Vittoria, Italian poetess, daughter of Fabrizio Colon- born in the castle of Marino in 1490, died me, in Feb. 1547. Her remarkable powers mind were early developed, and she was scarce- 4 years of age when she was affianced by her nts to Ferdinando Francesco d'Avalos, son the marquis of Pescara, a child of the same as herself. Afterward, however, she was t in marriage by the dukes of Savoy and aganza. Her parents were not inclined break the marriage contract, and her own affection for her lover was so deep, that nothing could tempt her to listen to other proposals, and in their 17th year they were married. Shortly afterward, her husband engaged in the war between France and Venice, receiving from Vit ia at parting a superb pavilion and an oidered standard, as well as some leaves of n in token of her hope that he would re- crowned with honor. A few months afterward he was taken prisoner at the battle of Ravenna, but was soon released. In his absence, Vittoria continually occupied herself with literature and with her correspondence with him. In order to see him occasionally, she removed from Ischia to Naples, but his high command permitted him to quit the field very seldom. In Naples Vittoria was engaged in studying the best ancient and modern authors, and in composing the poems which have given her celebrity. In the battle of Pavia (1525), at which Francis I. fell into the hands of his enemies, Vittoria's husband won distinguished honors, and it was supposed that he would at once be rewarded by the emperor. He, however, lent himself to the views of the opposite party, desirous of forming a new league against the emperor, and the rich bribe of the kingdom of Naples was offered to him in case of success. Vittoria implored her husband not to sully his high reputation even for a kingdom; her exhortations were in vain, but his attempts were frustrated. His wounds in battle, and his imprudence in drinking ice-water while suffering extreme heat and fatigue, brought on a fever, which had such effect upon him that he found it necessary to warn his wife of his dangerous condition. She at once set out for Milan, and when she reached Viterbo she was met by the intelligence that her husband was dead. Her excessive grief for a while caused her to lose her reason. At length she was restored, but resisted every offer of a second marriage from the many princes who sought her hand. She turned again to literary studies, and for 7 years struggled with her sorrows, consoling herself with the composition of poems to the memory of her husband. Finding at length solace in religion, she now composed a great variety of beautiful canzonets and sonnets, to which she gave the title of *Rime spirituali*. In the spring of 1537 she visited Lucca and Ferrara, and even contemplated a journey to Jerusalem, but was prevented from it. In 1541 she resolved on assuming the religious habit, and entered the monastery Di Suori in Orvieto, which she exchanged for that of St. Catharine in Viterbo. Her bust was placed in the collections of the capitol in 1845. A selection of her poems is contained in Gironi's *Raccolta di Lirici Italiani* (Milan, 1808). IV. Marc' Antonio, duke of Paliano, distinguished for the part which he took in the battle of Lepanto, died Aug. 2, 1584. On his return to Rome after that battle, he was received with the highest marks of honor, and was afterward made viceroy of Sicily by Philip II. of Spain. V. Fabio, born in Naples in 1567, died there in 1650, the author of many books on botany, and the first to write a botanical work with copperplate illustrations (Φυτοβασανος, Naples, 1592).

COLONNA, Francesco, a Dominican friar, born in Venice about 1433, died there in 1527. In his youth he became enamored of Ippolita, niece of Teodoro Lelio, bishop of Treviso. Not long after, he entered the monastery of Santi Giovanni e Paolo at Venice. He is famous as the author of a fantastical book entitled *Hypnerotomachia Poliphili, ubi humana omnia non nisi somnium esse docet*, or the "Combat of Sleep and the Lover of Polia, in which all mortal concerns are shown to be only a dream." This book, notwithstanding its vagaries, has been recommended by high authority as a useful study in architecture, being filled with descriptions of imaginary edifices. It was first printed in 1499 by Aldus at Venice. Several French translations have been published, the last of which, by the architect Legrand, made its appearance at Paris in 1804, and at Parma in 1811, under the title of *Le songe de Polyphile*.

COLONNA PALACE (It. *palazzo Colonna*), a handsome and interesting structure in the Piazza di SS. Apostoli at Rome, belonging to the family from whom it is named, but occupied of late years by the French embassy. It was commenced by Pope Martin V. in the 15th century, and was the residence of Julius II. and of Cardinal Borromeo. It contains a picture gallery, open to the public every day except holidays, which in point of size and architecture ranks with the finest in Rome. The ceiling of the great hall, supported by handsome columns of *giallo antico*, is covered with frescoes illustrative of the history of the Colonnas, the central subject being the battle of Lepanto. The collection of paintings, numbering about 1,400 pieces, has been greatly reduced by division among branches of the family, but still embraces many magnificent works by Titian, Guido, Salvator Rosa, Guercino, Paul Veronese, Giulio Romano, Holbein, and lesser artists. Almost equally celebrated as the picture gallery are the Colonna gardens, which extend behind the palace in terraces up the west slope of the Quirinal. They are planted with box, ilex, laurel, &c., and have long rows of straw houses in which the lemon is brought to rich perfection. There are some colossal ruins in the garden, supposed to belong to the temple of the sun erected by Aurelian.

COLONNADE, a series of columns symmetrically arranged, either within or without an edifice, serving for decoration, and often also forming a promenade. The colonnade at the entrance of a temple is more usually called the portico or peristyle. Colonnades were common in ancient Egyptian and classical architecture, and the most striking antique remains of them are those of the temple of Denderah, Baalbec, and Palmyra, of the temple of Jupiter Olympius at Athens, and of the portico of Octavia, built by Pompey, at Rome. The most celebrated modern colonnades are that of the Louvre at Paris, constructed by Claude Perrault, and the semi-circular portico in front of St. Peter's at Rome, the work of Bernini.

COLONY (Lat. *colonia*), a community founded in a foreign locality by emigration from a parent nation, with which it remains in political connection. The Phœnicians, the earliest maritime nation that sent forth colonies, prosecuted their commercial interests by settlements in Cyprus, Crete, Sicily, and other Mediterranean islands, and on the southern and western coasts of Spain, whither they were attracted by the wealth of the country in metals. Much the most important of their colonies was Carthage, founded by the Tyrians. Carthage also sent forth unimportant colonies in the 5th century B. C. The Greeks were prompted to colonization by the narrow limits of their territory, its comparatively extensive sea-coast, the vicinity of lands in 3 directions across the sea, and the difficulties which resisted their progress northward. Similar laws, religion, language, and a common participation in the national games, bound together the mother and the daughter states; and even after the political connection was dissolved, the traditions of relationship usually united them when either was attacked by a foreign enemy. The Athenian colonies in Thrace were the first that were established with definite political and commercial designs. Greece began to send out colonies after the Dorian conquest of the Peloponnesus, the principal of them being founded between 700 and 550 B. C., especially by the Athenians, Corinthians, Eubœans, Rhodians, and Milesians. The Dorians colonized several of the islands, as Crete, Rhodes, Ægina, also the district of Asia Minor named from them Doris. They also contributed largely to the settlement of Sicily. Dorians from Thera founded Cyrene: the Corinthians, Corcyra and Syracuse; the Megarians, Chalcedon, Byzantium, and other places on the Euxine. The colonization by the Ionians from Attica of the 12 cities of Asia Minor was at a time anterior to authentic historical records. North of these were situated the 12 confederate cities of Æolia, founded by Æolian Greeks. These cities or communities in turn sent forth colonies. From the city of Miletus, one of the Ionian 12, issued numerous Milesian colonies, which occupied both sides of the Euxine, and effected a settlement on the Tauric Chersonesus, the modern Crimea. There were also the Greek colonies of Olynthus, Potidæa, and Epidamnus, in Macedonia, of Crotona, Sybaris, Tarentum, Brundisium, and many others in lower Italy (Magna Græcia), of Massilia (Marseilles), on the southern coast of Gaul, and of Saguntum, in Spain. A system of colonization prevailed among the nations of Italy prior to the rise of the Roman power. It amounted to little more than sending off swarms from the main hive. At certain festivals the surplus young men were set apart, with religious ceremonies, to quit their natal soil and seek fortune elsewhere. Once gone, they founded independent communities, it being impossible for the parent state in that early stage of society to govern distant outlying settlements. By such means were the Etruscan and Sabine colonies formed throughout Italy and the adjacent islands. On this model the Romans organized their colonial system, but with the important difference that all the colonies were subject to the central power. Hence they were established by the act, or at least by the sanction of the parent state. "Those who leave without such consent, but in consequence of civil dissensions," says Servius, "are not colonists." Emigration commenced from Rome as early as the monarchy, but the colonial system did not obtain its development till conquest had brought the world under Roman sway. The earlier colonies were formed by locating bodies of Romans in places taken in war, ⅓ of the lands of the conquered being confiscated to the use of

le but the original inhabitants were
vise dispossessed. The settlers, being
t race, exercised power in accord-
and subjection to the Roman law,
nquered not enjoying the rights of citi-
p. When the Romans extended their con-
beyond Italy, as into Gaul, Germany, and
they built new towns in favorable posi-
o maintain their power. These formed
and were parts of the Roman state.
r, according to the political rank of
formed it, might be either a Latin
in colony (*colonia Latina* or *colo-*
Romanorum). The Latin colonists,
ect to the supremacy of Rome, yet
act state (*civitas*), with a constitu-
of their own; were not governed
magistrate, nor even by Roman
served in war, not in the legions,
ng the auxiliary troops. Roman colo-
the other hand, observed the jurispru-
on, and festivals of Rome, and re-
rights of Roman citizenship, except
frage and office, which could only be
at Rome. The extension of the citi-
until it became nominal merely, com-
the distinctions between the grades
nists. After the passing of the *lex Ju-*
y colonies were mainly planted, and
the double purpose of effecting settle-
rewarding the soldiery at a cheap
onies were the outposts of the empire
naculu imperii, as expressed by Cicero),
of Latin civilization, and the medium
which the language and administration
essed on subject peoples. The colonial
its later development was ancillary
act from, the provincial system. A
was a subject country governed by a
propraetor, or proconsul from Rome.
were planted within the province, the
quantity of land being taken for use
colonists in a particular locality, but the
country was not considered a colony ac-
g to the modern acceptation of the term.
irruptions of the northern hordes, and of
racens from the East, were in no sense

It was not till the rise of the maritime
Genoa and Venice that colonization be-
n more modern times a matter of state pol-
The colonial establishments of the Genoese
commercial, like those of the Phœnicians.
ian colonization was of a more military
ter, like that of Rome. The object of Gen-
migration was to erect trading establish-
and in this they exhibited much enter-
They founded colonies on the Hellespont,
shores of the Black sea, in the Crimea
(the remains of their forts still existing),
the sea of Azof, which were governed
the parent state with a wise and strict
ation. The Venetians, although not
in mercantile cupidity, were more guid-
the desire of dominion. Candia and Cy-
which the Venetians established colonies,
onsidered as subject realms of the republic.

—Portuguese colonization much resembled the Venetian. Its main features were military depots to centralize the native trade. Having discovered the way to India by the cape of Good Hope, they established garrisons as relay colonies along the coasts of Africa, the Persian gulf, and elsewhere on the route. Goa, Diu, and Damaun, on the Malabar coast, Negapatam, on the Coromandel coast, and Malacca, were the most important stations on the Indian mainland. In 1505 they established themselves in Ceylon, with lesser settlements in Java, Sumatra, Celebes, and Borneo, and after the year 1511 on the Spice islands. Their commercial connections formed with China and Japan were not strictly of the nature of colonies. The first Portuguese factories on the Indian coast were founded in bloodshed, and were only developed into strength by the administrative abilities of the viceroys, especially of Almeida, and yet more of his successor, Affonso d'Albuquerque. With the annexation of Portugal to Spain the colonies of the former passed into Spanish hands, from which they were speedily taken by the Dutch. Brazil only remained, and, at a subsequent day, it too fell away. Portuguese colonial trade was carried on, not through the medium of privileged companies, but by fleets leaving Lisbon annually in February and March.—As Portugal declined in colonial power, Spain arose to an eminence impossible but for the discovery of a new hemisphere. The first colony of Hispaniola, founded by Columbus in 1492, was followed by establishments in Cuba, Porto Rico, and Jamaica. The conquest of the great kingdoms of Mexico by Cortes (1519–'24), of Peru, Chili, and Quito, by Pizarro and his followers (1526–'36), ensued. The settlements concurrent with these acquisitions were essentially colonies of conquest. Gold and silver were the principal objects of their enterprise, not as the legitimate proceeds of commerce, but as the spoils of force. Consequently the first colonies planted along the coast were military stations. Such were Vera Cruz, Cumana, Carthagena, Valencia, Caracas, and Porto Bello. The inland colonial cities were located near the mines as depots of stores and treasure; such were Acapulco, Panama, Lima, Concepcion, and Buenos Ayres. Their commerce in treasure was under the strictest regulation. Import was confined to the sole Spanish port of Seville, from which 2 squadrons annually departed for the colonies of the main, the one consisting of the 12 treasure galleons for Porto Bello, the other of 15 ships for the port of Vera Cruz. Charles V., in 1532, settled the fundamental principle of the colonial government. Administration was placed under a council of the Indies, resident in Europe, with 2 viceroys and 8 captains-general having independent jurisdiction abroad. Together with this civil government was introduced a complete ecclesiastical organization. At a later period these settlements underwent modification toward a commercial character. The Philippine islands, although taken possession of as early as 1564, and regularly visited by the South sea galleons, were never profitable, excepting as relay stations. Spain lost her colonies on the American continent by their revolt in the early part of the present century, and retains now only the islands of Cuba, Porto Rico, and Culebra.—Spanish misrule in the Low Countries gave birth to the Dutch colonies. The war of independence of the Dutch republic called into existence a navy sufficiently powerful to cope with Spain. Dutch merchants, being excluded from all share of the Lisbon trade, sent an expedition to the Indies in 1595, under the command of Cornelis Houtmann and De Molinaer, and discovered that the Spaniards and Portuguese had but a slender hold on the natives of the East. It was not long before a colonial system was firmly established in successful competition with its rivals. By the early part of the 17th century the Dutch had taken one after another all the Portuguese settlements, excepting Goa. By the middle of the century their power had reached its height. Their possessions under the jurisdiction of the governor of Batavia had attained the magnitude of an empire; they had driven their Portuguese rivals from India and Ceylon, and obtained the exclusive commerce of Japan, and had established a colony at the cape of Good Hope as a bulwark of their Indian possessions. These magnificent results were accomplished by a trading company, and, like British India, their empire was governed from a counting-house in Europe by a board of directors (*Bewindhebbers*). The Dutch also turned their thoughts toward the other hemisphere. Under the guise of a West India company they made, from 1630 to 1640, extensive conquests in Brazil, only to lose them more speedily than they were acquired. A few small islands of the Caribbean archipelago, among them St. Eustatius, Curaçoa, Saba, and St. Martin, which were settled as locations whence to carry on contraband trade, yet belong to the Dutch; but since 1667 there remains to them on the American continent in the nature of a colony only the district of Dutch Guiana. Their settlement of New Amsterdam is mentioned elsewhere.—Under Christian IV. of Denmark was formed a Danish company of the Indies in 1618. Tranquebar was acquired for Denmark, and, later, several establishments were made on the coast of Malabar, also in Bengal, and especially at Friedrichsnagor. Several other companies were formed with the same object, of which none now survive save the Asiatic company, incorporated in 1732. In the West Indies, the Danes took possession of the islands of St. Thomas and St. John, and in 1733 the island of St. Croix was purchased from France. In 1721, the Bergen merchants were encouraged by government to establish a trading station in Greenland, by means of the mission of Father Egede. In 1845 the Danish government sold its East India colonies to an East India company. Sweden, desirous to share in the advantages of the India trade, established in 1731 an East India company, especially for the prosecution of the tea trade with China, with success. She also acquired from France the small island of St. Bartholomew, in the West Indies, which is the only colony still retained. Austria in like manner founded the Ostend company in 1722 for East Indian commerce. Being unable to make head against the English and Dutch, the company was dissolved. Another attempt on her part to colonize the Nicobar islands, which had previously been occupied and abandoned by the Danes, was equally unsuccessful.—France owes her colonial system to her minister Colbert, who, in 1664, purchased and encouraged emigration to Martinique, Guadeloupe, St. Lucia, Grenada, and other of the West India islands; also to Cayenne, and more important than all, to St. Domingo. These colonies flourished until some of the smaller were lost by the peace of 1763, and St. Domingo by revolt. On the North American continent, France had possessed since 1661 Canada and Acadia, and part of the island of Newfoundland, but they were of little value to the parent country. The wars with England finally deprived France of Acadia and her settlements in Newfoundland in 1713, and of Canada and Cape Breton in 1763. Louisiana having been ceded to Spain, again restored, and in 1803 sold to the United States, French Guiana was all that remained in French possession on the continent. Colonization in the eastern hemisphere was commenced by the French East India company in 1664, by the establishment of a factory at Pondicherry. The isles of France and Bourbon, having been abandoned by the Dutch, became flourishing French colonies. Under the administration of Dupleix, governor of Pondicherry, the several French settlements made considerable progress in India, but before 1763 most of them were transferred to the British. After the fall of Napoleon, the isle of France was ceded, leaving to the French in the Indian ocean only the isle of Bourbon and some small establishments in Madagascar. Parts of Senegambia, until recent years, constituted the only possession of the French in Africa. In 1830, having gained a footing by conquest in Algiers, they established therein a colony which has become of greater importance, in a commercial and national point of view, than any other they ever possessed. In 1847 France established a protectorate over the Marquesas islands, which are thus virtually a French colony.—The rise of English colonial power was at first slow. Gold was the object of the expeditions in Queen Elizabeth's time to North America. Commerce was rather directed eastward to the localities where it was prosecuted so productively by the Portuguese and Dutch. Collisions soon occurred in the Indian seas between the English and their commercial rivals. The English were driven from the islands in 1623, and restricted to the petty forts they had established at Madras, and on the coasts of Coromandel and Malabar. Cromwell's vigorous administration extended an influence to the most distant depend-of the English commonwealth, but mis- ment under the restoration reduced commerce to a condition from which it ed only by a reorganization of the com- in 1708. From this period the rise of -Indian power was rapid beyond pre- Events, apart from mere ability of on, favored it. English dominion the ruins of the Mogul empire. and after him Clive, during the com- which distracted the attention of pursued the plan of aggrandizement, led it with the victory of Plassey, June 7. Eight years afterward, when the prov- f Bengal was ceded, the native rule re- but in name. The Mahrattas, the Sikhs, ll the other warlike races, have been ely reduced, and, although the years e exhibited a gigantic insurrection, rule seems for the present reasserted, colonial empire of the Indies has been y constituted an integral portion of the dominions.—The English colonies in America redound to the credit of pri- venture, and not of the British nation in ate capacity. The crown gave char- grants of land to companies and in- but generally speaking, the country d by a succession of individuals flee- the distractions of Europe during the d 18th centuries. In 1606 two com- of merchants of London were incorpo- nder the names of the London company e Plymouth company, with exclusive o trade within their respective limits. sent to Jamestown, Virginia, in 1607, s, who, before the year was out, were by starvation to 38 persons. Two erward the number of colonists was ed by immigration to 500, of whom 0 perished miserably of famine. Again 2 the settlers were reduced by Indian and in 1624 the colony, after having me its first hardships, was taken into the of the home government. The Dutch, me, who had been rising to the rank of class maritime power, were not content heir acquisitions in the eastern hemi- but sought new fields of enterprise in the Henry Hudson, in the ship Half Moon, d a large extent of the North American n 1609, and reported to his employers prolific in beaver and other valuable In pursuit of this lucrative commerce e expeditions were fitted out, "with c tinually resident," so that, before or more forts had been erected on the us or North river. The northern com- Amsterdam trading company, New Neth- company, and finally the West India ny, all prosecuted the trade; the last association being chartered in 1620 with unlimited powers to colonize, govern, fend the country known as New Nether- Within the few years immediately suc- g, repeated importations of immigrants, chiefly Dutch and Walloons, swelled the population. In 1623 New Netherlands was formally erected by the states general into a province, and so remained, with New Amsterdam on the island of Manhattan for its capital, till it was taken by the British in 1674, and named New York. The story of the Mayflower and the landing of her colonists on Plymouth rock, need not be here related, nor how "they came to plant on the bleak borders of eastern New England the institutions which it had once been their purpose to cultivate, under the protecting flag of Holland, in the genial regions of New Netherlands." Meanwhile the civil strifes at home caused successive emigration of Puritans to New England, Catholics to Maryland, and cavaliers to Virginia. In the progress of European troubles New Jersey and Pennsylvania were settled by persecuted Quakers; and the colonies, generally, increased by accessions of Germans, French Huguenots, Dutch, Swedes, English whigs, and Scotch highlanders. The settlements, although compounded of such heterogeneous materials, grew up in habits of independence and self-government. Excepting in the royal governments of Virginia, New York, and at a later period the Carolinas and Jerseys (the other colonies being under charter or proprietary governments), the crown, as it had done but little toward the settlement, had but little right of interference in the affairs of the colonies. As early as the middle of the 17th century the principles of no taxation without assent of the people, and no authority of parliament over the internal affairs of the settlements, were insisted on by the colonists. Her persistence in pretensions contrary to these principles caused to Britain the loss of the colonies.—The British settlements in the West India islands rose into importance with the introduction of the sugar cane into Barbados in 1641, and into Jamaica about 1660. The naturalization of the coffee shrub, in 1732, rendered them of higher value. Newfoundland early became of the first moment in respect of its fisheries. After the independence of the 13 colonies, Canada and Nova Scotia acquired new importance. The discovery of Australia has opened a not less valuable colonial field. Within recent years England has introduced a change in her policy toward the colonies. The advantage proposed to any country by the establishment of colonies is mainly an extension of traffic; hence participation in such traffic was jealously withheld from other nations, until the recent introduction of a free trade policy in Britain was extended to her possessions. A more liberal tone of government has also been introduced. The colonies have now the administration of their own affairs, with but little check from the parent country. Each has a governor appointed by the crown, with an elective house of assembly, and a legislative council directly or indirectly responsible to the people. The colonies of Great Britain annually cost her £3,500,000 sterling of actual outlay, many of them being expensive without any equivalent benefit.—Penal colonies are of comparatively modern date, and are more a question of practical ethics than of emigration. Colonies of this nature were formed by the Portuguese and Spaniards on the coast of Barbary, by the Portuguse at Angola, by the Dutch in Java, by the British in New Holland, and by the French at Cayenne.

COLOPHON, one of the twelve Ionian cities on the coast of Asia Minor, situated about 9 m. N. W. of Ephesus, on the banks of the Halesus, a small stream, famed for the coldness of its waters. It was 2 m. from the coast, on which, however, it had a port, named Notium. The city and the port were connected by long walls. Colophon was founded, according to tradition, by Mopsus, grandson of Tiresias. It suffered much from the Lydian king Gyges, from the Persians during the Peloponnesian war, and afterward from Lysimachus, king of Thrace. The name Colophon was finally transferred to Notium. Only a few miserable cabins now mark the site of Colophon. Colophon, according to Strabo, was celebrated both for its navy and its cavalry; indeed, the latter was so efficient, that it was said always to carry victory wherever it went. Livy tells us it was one of the cities honored by the Romans with the privilege of exemption from taxation. Colophon was one of the 7 cities which claimed the honor of having giving birth to Homer. Mimnermus and Hermesianax the elegiac poets, Polymnestus the musician, Antimachus, Xenophanes, and Nicander were born there.

COLOR, one of those simple and obvious qualities of physical objects, as perceived by us, which can only be defined by its synonymes, hue, dye, &c., or by some theory respecting the nature of light, of bodies, or of vision, but the mode of manifestation or production of which is far from being equally obvious. The color of healthy arterial blood in the higher animals is always florid red; that of pure sky or air, blue; that of most growing leaves, some shade of green. Many chemical compounds are known by certain colors, but by heat or other agencies these colors are often changed. The colors of certain paints and dyes are to a certain degree permanent, but by exposure to light and air they undergo a gradual change. Probably no colors are absolutely permanent, but those thus named are so each during a certain condition of the substance to which it belongs. Other colors, as those shown by a diamond cut in certain forms, or by a prism, those of mother-of-pearl, of the plumage of birds, and of soap bubbles, depend on some accident of form or size of bodies, or of the structure of their surfaces, and these change with the position of the observer; hence these are known as variable colors.—When white or solar light is transmitted through triangular prisms of glass, or other media differing in dispersive power from the air, the beam or ray of white is analyzed, being separated into the 7 primary colors, red, orange, yellow, green, blue (light blue), indigo (dark blue), and violet. The prism turns all these colors out of the straight line pursued by the white light, the violet most, the red least; so that instead of a round white spot, it throws upon a screen an elongated or oval figure, containing in succession the several colors already named. The most bent or refracted color, violet, may be called the highest color, the red the lowest; the whole figure is the solar spectrum. The primary colors have never been further decomposed by any process to which they have been submitted: hence they are considered as elementary or simple. Recombined by a second inverted prism or a lens, they again form white light. The colors are those of the rainbow, but reversed in order, owing to a difference in the mode of viewing. The proof that these are the elements of white light was first furnished by the experiments of Sir Isaac Newton, in 1672. It must be added, however, that between any 2 of the simple colors of the spectrum there is a gradual interchange of hue, so that, in fact, the different colored rays existing in and obtainable from the white ray are not 7, but indefinite in number.—The subject of the colors of natural bodies, including leaves, flowers, fruits, metals, minerals, solutions, &c., has always been one of difficulty, and physicists are still divided in their opinions concerning it. The analysis of sun-light shows us that all possible colors are in it; but how do bodies behave toward the light, that one of them should return to the eye one, another another color, or set of colors, and so on! A few preliminary facts will be in place before an answer to this question is attempted. By small mirrors suitably placed, if you cast upon the same spot on a white screen any 2, 3, or more colors of the spectrum, a compound color is always obtained, differing from the simple hues that compose it. Red and yellow blended give orange; yellow and blue give green; but the orange and green hues differ from those of the spectrum. Red and violet give purple; different quantities of yellow, blue, and green, or of orange, yellow, and blue, give all possible varieties of green, &c. The blending of differently colored paints produces a like result; but the color obtained by the combination of hues sensibly identical with those of the spectrum, is not identical with that obtained by the combination of corresponding spectral colors. Artists, it is said, are enabled to compound all possible colors from 3, red, yellow, and blue. White, which is the result of a combination of all the colors, and black, which is the absence of all, are not properly colors; yet these 2 figure largely as elements in the actual colors of natural bodies, paints, and dyes. By mixing with a pure vivid red considerable white light, the red is, as it were, diluted and softened, and pink is the result. Admixture of white in various degrees gives an indefinite number of tints of any color, the absolute hue being unchanged. So mixture of black or absence of light, as when a body is h that it shall wholly extinguish part of the falling upon it, and return a certain color of the remainder, gives any number of ues of the same color or hue. Thus is ob- for each hue a scale of tones; the hues lves not being due to the presence of t or darkness, but to single or com- d colors such as are found in the spectrum. when first opening, show a tint of in midsummer, an intense purer green; y autumn, a dark or shaded green. In case they must be supposed to contain re of rch and colorless woody fibre; in the chlorophyl; in the 3d, less chloro- with more earthy deposit and hardened opaque fibre. Finally, when the chloro- decays, *i. e.*, is chemically changed, they the rich purple, red, and golden hues poets have always loved to celebrate in s of autumn. Brown and gray shades, or composed of darkness: sensible hue of certain colors which, in the spectrum, cannot be further can always be separated by the when found in natural objects, giving re, but not all of the spectral colors; the colors of natural objects are always d. Light from white paper gives a spectrum; from yellow, a fragment ctrum, showing the yellow space bright, me green and orange, sometimes a faint additionally of blue and red; blue paper whole spectrum, less the orange and red; of others. The light of the purest yellow er, analyzed, shows also some green and So a colored solution or glass transmits ly the rays that make up its own color, but colors that in the spectrum are neighboring se. Light coming through a blue glass is to contain a strong blue element, feebler and i go, and still feebler yellow and Lo g through the blue glass at a spec- colors are seen, and in corre- degrees of vividness. The blue medium ough itself also the closely related rays, it extinguishes or cuts off the more distant of all others. The latter effect, however, n the former with the thickness of the so that a blue or red solution of suffi- depth in space would extinguish all the entering it, and be equivalent to a black or opaque body. Another way in which whole light may be extinguished is by using whose colors are complementary. Green are such colors. Look through a green the red or lower portion of the spectral s cut off by it, and all bodies giving out white or higher colors appear of some of or nearly allied to green; but pure red orange bodies are apparently black; their ight cannot be transmitted. Look through a ed glass, and the results are reversed; bodies white or lower colors appear red or of some color; those of the higher, black. Now the 2 glasses together; they extinguish both s of the spectrum, and if their colors be exactly complementary, even white objects can send no light through them, and all objects become invisible. The flame of alcohol in which common salt is dissolved is almost a pure yellow. Illuminate with this a room containing persons and variously colored objects; all will be visible just in proportion as their light consists of yellow, or contains it as a necessary or incidental ingredient; but the red of the cheeks and lips, and all red, purple, and blue objects, will appear of some shade of gray or brown, approaching to blackness; so that the face will wear an unrelieved yellow and ghastly appearance. That red and blue objects are not then seen perfectly black is explained by Wertheim's recent discovery that the flame mentioned is not perfectly monochromatic, but contains some orange and violet. No body, therefore, not self-luminous, can appear of a color to which none of the rays falling on it correspond; but if the sensible color of a body is orange, it has some yellow mixed with it; hence it may be seen by what appears to be blue or green light; for that, if not prismatic, will also have some yellow along with it, and to this the yellow in the color of the body will respond.—The true physical theory of colors, whenever found, must agree with and include the facts now stated, and all facts relative to colors and bodies showing them. The theory now commonly received is that proposed by Sir David Brewster, namely, that when a body appears permanently of any given color, simple or compound, it is because it absorbs the remaining colors of the spectrum, *i. e.*, of the complete or white ray, and reflects those which constitute the color of which it appears. Thus a scarlet flower is a body having such relations to light that it absorbs violet, blue, &c., reflecting only certain proportions of red, orange, and yellow. In this view, bodies, as snow and milk, appear white when they reflect or transmit entire or white light; others, as certain inks and coal, appear black, because they absorb all the colored rays in the proportions which form white light. But as all bodies both absorb and reflect in some degree, the proportion of light which white bodies absorb and black bodies reflect is also a mixture of the various colors in the proportions forming white. To prove that the most intensely black body still reflects some light, look through a long narrow tube into a room completely darkened: this may be considered as presenting before the eye an absolutely black spot. Let a piece of coal or black velvet be brought against the inner end of the tube; the body is at once visible, as something differing clearly from the black space. There are many objections both to the expression and the substance of Brewster's theory. Porous bodies absorb liquids and gases, but these also are material. We do not know that any bodies absorb light; what we do know is, that light disappears at or within their surfaces, *i. e.*, that they extinguish a portion greater or less of the light falling on them. Again, we must distinguish between mirror-action or reflection and that secondary emission of light by which bodies not self-luminous become visible to us. Oersted separated the light coming from bodies into 2 parts. First, he found that all bodies have in some degree the property of mirrors, but that in those not polished this action is too feeble to show images. Now, this reflected portion of the light which ordinary bodies return to the eye has the color, not of the illuminated body, but always of the luminary. Let us remember, too, that reflected light, like echoed sound, gives us no idea of the body or obstacle from which the reflection occurs, but always of the source. A perfect mirror is invisible. It shows us not itself, but objects situated in certain lines before it, and only in certain lines. Bodies cannot be visible by reflected light; all they could do by such means would be to show us in all their surfaces images of the sun and surrounding objects. Secondly, Oersted found that illuminated bodies gave out another portion of light not reflected, which had the proper color of the bodies themselves. Arago went further. Under POLARIZATION OF LIGHT it will be shown that when light is transmitted through certain media, or emerges through the surface of incandescent solids or liquids, the rays become, as it were, flattened (polarized) in a certain plane, which is at right angles to the plane of incidence; that is, such light is polarized by refraction. But light which is reflected from the surface, as from a mirror, is flattened (polarized) in another plane at right angles to that of the refracted light, namely, in the plane of reflection; that is, such light is polarized by reflection. Now, Arago proved that from illuminated unpolished bodies a small and usually imperceptible amount of light is returned to the eye having the color of the luminary, and that this light is polarized by reflection; while much the larger portion of their light, having the color of which the body is seen, is polarized by refraction, and hence must have come from beneath the surface of the bodies emitting it. Bodies then are not, as usually taught, visible by reflected light. They themselves emit and radiate in all directions, like the sun or a candle, the light by which we see them.—This brings us again to a theory long since proposed in substance by Euler, and explained at length in his "Letters to a German Princess." Two viols or other stringed instruments being attuned in unison, though many feet apart, if a string of one be made to give out a musical sound, the corresponding string of the other, being fitted to vibrate in the same times, takes up the vibrations from the air, and actually emits the same sound, or some chord of that sound. The first induces vibrations in the second; the second reciprocates the vibrations of the first; but the conditions of the second must first be suitable. In this view, when sunlight falls upon various bodies, it induces (according to the undulatory theory, by the communication of agitation from the ethereal medium to the molecules of the bodies) a luminous condition or power in the illuminated body, but which in most bodies remains only so long as the action of the original luminary is exerted upon them. But though the body receives the whole impression of white light, it will in turn reproduce the whole, or such part as the condition of its molecules fits it for reciprocating. If it reciprocate all the colored rays in due proportion, and in considerable amount, it will be white: if in like proportion, but in almost imperceptible amount, it will be called black. If a body reciprocate mainly the blue and allied rays, it will be some shade of blue; and so of all colors. Moreover, whatever rays the molecular condition of the body forbids it to reciprocate, it will of necessity extinguish; but as force can no more be destroyed than matter, this extinguished light is not lost, but becomes manifest again as heat in the body receiving the rays, or perhaps in certain circumstances as affinity or electricity. According to Brewster's theory, a body is exactly of the color which it rejects, or does not possess; according to Euler's, the body is of the color it shows, and color is not a quality of light merely, but a secondary physical quality of bodies, due to a primary mechanical one. So, a white body, as a screen, can respond to any color thrown upon it; but a colored body can only respond to rays within a certain limit, and if it receive rays only of colors beyond this limit, it must appear black. In the undulatory theory, as now received by the highest authorities in physics, there is assumed to be a fixed and invariable connection between the color of a given ray and its refrangibility: and the latter again depends on its rate and time of vibration. Thus, as calculated by Dr. Young, the middle red ray has a wave length of $\frac{1}{39180}$ of an inch, and corresponds to 477 millions of millions of pulsations per second of the ether, or of the retina; while the middle violet has a wave length of $\frac{1}{59750}$ of an inch, and corresponds to 699 millions of millions of pulsations per second; the other colors having wave lengths intermediate to these. Sir David Brewster, however, who set out with a partiality for the now exploded corpuscular theory, examined the spectrum with variously colored glasses, and declared that he detected some red, yellow, and blue in all parts of it. He accordingly proposed a theory of white light as composed of 3 elementary colors only, those just named: each color having all the various degrees of refrangibility, and the other colors being mixtures of these 3. Helmholtz has recently shown that many of Brewster's results were due to using imperfect prisms, and that when these sources of error are in a high degree removed, Brewster's mixture of rays through the spectrum fails to appear. Plateau, Forbes, Maxwell, Airy, and others, have recently experimented on the subject, and they find themselves unable to verify the theory of a mixture of 3 elements being sufficient to produce all the colors of the spectrum; while by mixture of these colors in the

ions claimed, they also fail to obtain
ght. The theory of 3 elementary colors
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not yet brought under any theory,
of dichromatic bodies—a pine
for example, which is red by trans-
yellowish by reflected light; smoke,
when looked upon, reddish when
h; leaf gold, both yellow and
so on. Euler's theory, however,
a wide range of facts. By it the
of the diamond and certain other mine-
h after exposure to light they conti-
ght for a time in the dark, is readily
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the luminous vibrations once estab-
ue for a time; and the fact is also ex-
hese and other phosphors in such
light of the color to which they
—COMPLEMENTARY COLORS. Solar
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ppose the 4 higher prismatic colors
their dominant hue is blue. If now
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a separate hue, this will be an orange-
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ence, in the particular hues of each
tained. blue and orange-red are comple-
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ues which shall go by the same
yet not be exact complements, the
eir mixture being then a white tinged
hatever color happens to be in excess;
light tint of that color. All the colors
low and green being blended give a hue
t-red; and of this the yellow-green is
ntary. If one of the compound hues
by the incorporation of more of a
element, the other must lose an equiva-
the same element. If the yellow-green
ed toward green by adding blue, the
ed, in order still to be complementary,
moved toward red, by losing the same
of blue as the other gains. If one of
e, irrespective of light or shade, in-
intensity, the other must also be made
tense; since, if the relative quantities of
lor existing in the normal spectrum be
intained, an uncompensated portion of
more colors must remain. But when

tones are considered, it is evident that all the darkness or shade entering into one hue must be compensated by white in its complement, or a complete and pure white will not result. Hence a tint of one color finds its complement in a shade of the other; as, for example, a light orange in a deep blue. In finding colors which shall be complementary to each other, therefore, three particulars are to be regarded in each, namely, the hue, intensity, and tone. White and black also play, in vision, the part of complements. Hence the following pairs of colors complementary to each other: Red—bluish-green; orange—blue (azure); yellow—indigo; green—reddish-violet; blue—orange-red; indigo—orange-yellow; violet—yellow-green; white—black; black—white. To which Chevreul adds: a red-orange—a blue-green; an orange-yellow—a blue-violet; a yellow-green—a violet-red, &c. M. Chevreul, superintendent of the dyeing department of the Gobelins manufactory in Paris, has constructed a chart of 24 hues, each shown in 24 different tones, and so arranged that not only the composition and relations, but also the complementary color of each of these, are obvious at a glance.—SUBJECTIVE OR ACCIDENTAL COLORS. Place on a sheet of white paper a red wafer, and look on it intently for some seconds; move the wafer suddenly away, and in its place is seen a bluish-green spot of sensibly the same size. So, the contemplation of an orange wafer will give an azure spot; of a yellow or violet one, an indigo or yellow-green spot; and the reverse. The color of the image is in all cases complementary to that of the original object. If small objects of any colors be well illuminated and viewed on a black ground, the complementary image is seen upon closing the eyes. Under the same circumstances, a white object will give a black image. The color thus following upon the contemplation of its complement, has been termed accidental, and also, from the fact that it arises from some state produced within the visual organ itself, subjective. A complete account of the ordinary phenomenon may be summed up thus: the color of the object itself grows gradually more faint, as it is viewed; after the cessation of the direct action of the object on the retina, there is, 1st, the persistence for about $\frac{1}{10}$ of a second of the primitive impression; 2d, the appearance of the accidental image; 3d, the permanence, for a longer or shorter period, of the latter, its intensity and duration depending on the intensity and time of the direct impression, while the color gradually fades and then gives place to others; or, if the eyes be successively opened and shut, or directed to light and dark surfaces in turn, a succession of appearances and disappearances of the image, usually attended with changes of its color. Any one may witness these curious results by taking a momentary glance at the sun or a candle flame, or looking steadfastly on a strongly-lighted colored object, and then proceeding as already indicated. The subjective color obtained from the red sun of morning or evening will be a hue of green, passing, if the eyes be kept closed, gradually to darker hues, as blue and violet, or restored to red by looking momentarily on a white surface, and then followed by green on closing the eyes; that obtained from the yellowish-white sun of midday will be indigo or violet. In either case, if the eyes are turned at once to a white surface, the image at first appears of its darkest color, passing successively through the lighter colors to white; and whatever color appears when the eyes are closed, its complementary is seen when they are fixed on a white surface. Place, again, any small colored object upon a white surface, and look on it for some time: colors will be seen to develop themselves about the edges of the object, the color being in each case the complement of that of the object, bluish green surrounding red, and so on. So a lighter ring forms around a dark object, or the reverse. Around the colored object there is, 1st, a slight extension of the actual color; 2d, a band, considerably broad, of the accidental color; 3d, under some circumstances, a new development without this of the actual color. Lay a narrow strip of gray paper on light green paper, the former will appear reddish; on deep blue paper, it will appear yellowish; in all cases, of a color complementary to that of the ground. So again, having a white surface illuminated from one source by white light, and from another by colored light, intercept the latter from a certain spot by a small opaque body: the shadow cast by this body, and which is really illuminated by white light, will always appear of a color complementary to that of the colored light cast on the parts around it. We may generalize these phenomena in the statement that the retina, having been once impressed with any color, gradually loses its sensibility to that color, and acquires a disposition to be affected by its complementary; and that this tendency is manifested both successively, or in time, and simultaneously, or in space. M. Scherffer considers that the continued or powerful action of certain colored rays, enfeebles or fatigues the sensibility of the retina to those rays; so that when the eye afterward receives white light, it is affected for a time by the other or complementary rays only. M. Plateau explains both the persistence of the original, and the appearance and changes of the successive accidental color, by supposing these changes to constitute the transition, in time, of a portion of the retina from an excited to its normal state; while irradiation and the simultaneous accidental color constitute a similar transition in space, or from the actually excited portion of the retina to that which is in repose. The consequences and applications of the law of vision now deduced are numerous, and of very great interest. When we look continuously on any color, as red, this color loses its vividness and beauty, because a color the opposite of red is excited in the eye, and blends with it; but its complementary, or any color near to this, as green, being now presented, the latter is at once improved, rendered more pure and vivid, by the acquired tendency of the eye to see that color. This is successive contrast; and it is thus shown that colors which will harmonize, or affect the eye agreeably, and be mutually improved, by being viewed in succession, are opposites or complements of each other. Colors nearly allied will be injured when thus beheld, and will affect the eye unfavorably. A purchaser who is shown in succession several pieces of bright red cloth, will pronounce those last seen to be much inferior in brightness and beauty of color to the first; but if his attention be now directed to green stuffs, he will declare them extremely bright; and after them, will see red stuffs quite as favorably. Again, two hues of red or blue seen side by side are not improved, because the impression made by either tends to excite an impression of green or orange in its neighborhood, which impression blends with the actual color of the other piece, and impairs it. But if blue and orange strips be viewed side by side, the blue throws orange upon the orange, and *vice versa*, so that the brilliancy and purity of both colors are improved. . This effect constitutes simultaneous contrast; and it shows that harmony in colors viewed at once and near to each other also requires that these should be, or approach to, complementaries of each other. If different tones be associated, the effect is always to make the tinted appear lighter, and the shaded darker, than it really is. This is easily shown by placing side by side several gray strips, passing gradually from quite light to dark; although the shade of each strip is homogeneous, yet its side toward a darker strip will appear to be the lighter, and that toward a lighter strip the darker. Chevreul's law, both for hues and tones, deduced from facts such as those now stated, may be thus expressed: "When the eye sees at the same time two contiguous colors, they will appear as dissimilar as possible, both in optical composition and in height of tone." Guided by this principle, the juxtaposition of colors in painting, in dress, in furniture, in the planning of gardens, in bouquets, and indeed wherever colors are employed with a view to artistic effect, ceases to be a matter of accident or an ill-understood experience, and becomes a subject for the rules and predictions of science. In all chromatic arrangements, harmonies of contrast are first to be sought. But as these are limited, harmonies of analogy are also called into requisition, with less striking, but often with very pleasing results. These may be secured in 3 ways: by arranging different tones in a series; by associating nearly related hues of a like tone, except where these, as blue and violet, distinctly injure each other; and by viewing appropriate groupings of colors by colored light, as that from a stained window, which modifies them all in a particular direction. The effect of the contiguity of white is to deepen all hues in whatever tone, unless it may be a light yellow; but with the deeper hues and tones, the contrast with white is generally too violent. Black accords

h almost any hue or tone, except that
er, as indigo or violet, render it appa-
ay and faded.—The reader is referred to
reul's work on this subject, or to Pro-
umans's "Household Science," for full
relation to the arrangement or match-
lors. A few examples may be given.
trim ge articles of dress with yel-
violet and deep blue flowers into
, to upholster mahogany chairs
on or dark orange stuffs, without an
ing band of black or green, or to place
rames near to strong red or orange
is a violation of coloristic harmony.
dark colors diminish, white and
enlarge, the apparent size of the
ge figures or horizontal stripes
while narrow vertical stripes heighten,
stature. All colors in the vicinity
influence the complexion, as already
Hues and tones of green improve a
de complexion, by throwing on it
of rose; while orange throws
abundant orange of the brunette
, and blending with the latter pro-
hitening effect. Light or tinted colors
with light, deep or shaded colors with
xions. Carpets, paper-hangings,
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s. The beauty of red flowers is
by the neighborhood of green foliage;
e hues of flowers it is easily observed
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ciation of a yellow or orange pollen
iolet, purple, or blue corolla, is familiar.
lelicately susceptible to colors will note,
frequent examples of modification of
contrast, that come under daily ob-
. Thus an orange-red sunset appears
ed to bright scarlet when seen through
in green foliage; narrow bands of gray
ving over such a sky appear of a rich
ive green; and at a later hour, when
nt forest is simply black, it appears
at the top with a vivid green, from
cause. One who looks intently at a
orizon, will see after some seconds a
tain appear to drop down to near the
while between this and the earth a
ed band of sky of changing width will
.—Since preparing the above, the wri-
ention has been called to a discovery
ny years since by Mr. John E. Williams,
York, to the effect that writing done
k ink on green paper, and then viewed
a translucent white or whitish medium,
paper, appears red, as if written with
; and generally, that black lines on
red ground will, when thus viewed,
f a color complementary to that of
nd. The case is similar to that of the
p on a colored ground, or to that of
of white light which coming through
a green curtain appears red; the feeble white light from the tissue paper over the black lines excites the retina, which, however, is sensitive mainly to the rays having a color complementary to the adjoining ground color. Hence the case comes under the ordinary law; but the experiment is a very neat and striking one.—VARIABLE COLORS. Very thin, transparent plates, as the films of soap bubbles, the thinnest possible laminæ of mica, selenite, and some other crystalline minerals, thin films of certain oils, especially those obtained from coal tar, spread over water, or those of the excretions of certain fish or shellfish in like circumstances, the thin coating of oxide formed on the surface of polished iron or steel in tempering, and some other thin plates or spaces, show under favorable circumstances one or all of the prismatic colors. These colors change with the thickness of the film, and sometimes with the direction in which it is viewed. In the case now presented, they are termed also colors of thin plates, and constitute what is called iridescence; the substances showing such colors being styled iridescent. The phenomenon was first investigated, about the year 1664, by Boyle and Hooke, the former of whom blew glass thin enough to show these colors. Until any film is reduced to a certain determinate degree of thinness, it shows the natural or permanent color of the substance, or is transparent. At a definite thinness, which is the same for all films, red appears; at a certain degree of attenuation beyond this, orange; then, in order, yellow, green, blue, indigo, and violet. This succession, or an approach to it, may be several times repeated, but not more than 7 times; after this comes a tenuity by which no color can longer be shown, and the actually transparent film then appears black. Soap bubbles showing these colors are conveniently formed by blowing from the bowl of a common tobacco pipe; or better, by dipping momentarily an inverted wine glass into strong soap suds. For the changes of color in the film of oxide covering a metal, see BLUEING OF METALS. Newton investigated these colors by pressing a convex lens of known curvature, its convexity downward, against a plane glass plate; the thicknesses of the included film of air varied at different distances outward from the point of contact; and by pressing with an increasing force, 7 orders of colored rings, the second from within containing a complete spectrum, were formed, an enlarging black spot finally appearing in the centre. From the regular order of their appearance these colors have also been called periodical colors. It is by calculating the thickness at which the successive colors are shown nearest the black spot, that the wave lengths of the several colors have been determined. It being assumed that in these situations the thickness of the film will just correspond with the length of wave of the given color, the calculation is then easily made. If, however, the rings be formed by transmitted instead of reflected light, the colors become exactly complementary to those before appearing, and the

central black spot becomes white—changes easily deduced mathematically from the theory. This theory refers the colors of thin plates to interference between rays reflected from the upper and under surface of the film, of air, liquid, or crystal; where complete interference occurs, the rays are extinguished, so that black is the result; and where the interference is partial, the wave lengths are changed from those of white light, or separated, so that each color appears where its wave length corresponds with that of the film. In the case of transmitted light, the interference is between that directly transmitted and that portion which suffers two reflections between opposite sides of the film. Other examples of colors of thin plates are those of the scales of fishes, the wings of insects, and the fine scales sometimes covering their bodies. Thick plates and mixed plates may also be so placed as to show variable colors. For the production of these colors by grooved surfaces, as mother-of-pearl, and also by fibres, fine wires, or spider's web, see DIFFRACTION OF LIGHT.

COLOR-BLINDNESS, a curious defect in vision, depending on a want of sensibility in the eye, or perceptive capacity in the mind, in consequence of which certain colors are not distinguished, or all colors are alike invisible as such; and to which, it is believed, attention was first called by the publication by Dr. Dalton, the distinguished chemist, in 1794, of the particulars of his own case. The name given to the affection is that proposed by Dr. George Wilson, from whose work on the subject, published at Edinburgh in 1855, the following summary is chiefly condensed. It has also been called Daltonism. A cause for the lateness of the discovery of this phenomenon may be found in the fact that while the ignorant would not investigate a disability of the kind under which they might labor, the educated and intelligent would learn to compensate for it by the use of other senses. No mention of color-blindness has been found in ancient or modern writers up to the period named; but the examples of the affection already collected are numerous, and among its subjects were Dugald Stewart and Sismondi, contemporaries of Dalton. The difficulty shows itself in 3 forms or degrees: 1, in an inability to distinguish nicer shades and hues, such as grays and neutral tints; 2, in inability to distinguish certain primary colors from each other, as red from green, or these from secondary or tertiary hues, as scarlet, purple, &c.; 3, in inability to discern any color as such, the person seeing only white and black, lights and shades. In the 1st degree, this affection is, among males, rather the rule than the exception. Perhaps this is only another expression for the fact that with most men the eyes have been very little educated in discriminating colors—the possible capacity has not been developed. Dr. Wilson found that, of 60 persons in the chemical class of the Edinburgh veterinary college, the majority declined to name any colors beyond red, blue, yellow, green, and brown; while they failed entirely in attempting to arrange nearly related hues of yarns or stuffs, or those of varying shades of the same hue. He found that pink and other pale colors, especially pale yellow and blue and green, were often confounded. The same thing happened with orange and yellow, lilac and bluish gray, &c. In the 2d degree, in the less marked cases, red and green, or these with olive and brown, fail to be distinguished. And it is apparently singular that colors among the most distinct to a normal eye are in these cases the most easily confounded, red and green being more readily so than yellow and purple; while green is, in these respects, the most delinquent of all the colors. Dugald Stewart could not distinguish the red fruit of the Siberian crab from the green color of its leaves. Three brothers, Harris, mistook red for green, orange for grass-green, yellow for light green. A tailor at Plymouth regarded the solar spectrum as consisting only of yellow and light blue; while indigo and Prussian blue he pronounced black. Dr. Dalton could not by daylight tell blue from pink; he scarcely saw the red of the spectrum, and considered the remainder of it as showing but 2 colors. But a failure to perceive the more refrangible rays is most common. Seebach concludes that all eyes, however imperfect otherwise, see yellow; and that the sensations of complementary colors are inseparable, so that if the eye be sensible or insensible to either, it will be so to both, the eye that fails to see orange also mistaking blue, &c. In the 3d degree, however, admitted by other observers, all colors are recognized only as giving certain degrees of light or shade. This form is rare. Dr. Wilson found but one case; and in this some of the colors could be named by gas light or transmitted light, none by reflected daylight. —This affection, in any degree, causes the loss of a positive pleasure; and in its severer forms occasions many inconveniences, and probably often serious dangers. Wilson advertised in the "Athenæum" for cases of this kind: the effect of which course, with his own observation, was to accumulate a number of striking, often amusing instances; as, of tailors who matched black cloth with red thread, and scarlet livery with green strings; of a chemical lecturer who always asked the colors of his compounds; of a physician who never found scarlet fever; of a gentleman who condoled with a lady, supposing her in weeds when she was dressed in a vivid green; of a Quaker who bought a bottle-green coat for himself, and a scarlet merino gown for his wife; and of a school-girl who attempted to arrange the colors in her drawing by the taste. The color-blind very often do not know their own fault: and in the lower walks of life their lack incapacitates them for certain employments, or may even imperil life. These evils particularly befall weavers, tailors, gardeners, railway attendants, sailors in the steam service, and others dependent on the use of colored articles or the

tion of colored signals. The importance
ect perception of colors, in the present
of signalling upon railways and shipping,
t be over-estimated. For example, the
h admiralty orders require at night a
light on the starboard, and a red light on
rt side of vessels; and by the color the
man must know which side of the vessel is
d him; consequently, whether it is going
t or left, and whether to starboard or
us helm. Although no case of accident
et been traced to color-blindness in the
lants, yet such a result is easily conceiv-
especially as their powers of vision are not
; and the most doubtful complementa-
ed and green, are much in use as signals.
ical inferences are that the ability in this
t of candidates for the posts of sailors and
y men should always be first carefully
; but, better still, that form and position
nals should, as far as practicable, be sub-
d for color, as the former are qualities
able to be mistaken, and the color-blind
y perceive form even more correctly
persons. Dr. Wilson found that of
persons examined by him in Edinburgh,
than 1 in 18 were in greater or less de-
color-blind. Of these, .022 confounded
nd green, .018 red and green. The larg-
oportion he found among the educated
s—a thing which may easily be, in this
f false educational systems, that fail to be-
l true knowledge must begin, with se-
uickened senses and the power of cor-
vation. The taste for and perception
, though perhaps confined to strong col-
both higher and more general among
tribes.—Among other conclusions at
. M. Wartmann arrives, are these: that
blindness has been as yet found only in
hite races; that the female sex furnishes
w examples; that cases occur equally with
r black eyes; that the defect is sometimes,
always, hereditary; that it may com-
er birth; that it involves an inability
f complementary colors or contrasts
, that it does not arise from disease of
e, or coloration of the humors or retina,
as its origin in the sensorium. The theory
ting the cause of this defect is not conclu-
settled; but all the facts named agree well
the conclusions of Wartmann just stated,
ve to the part taken in the phenomenon by
re and the brain respectively. The cause
mewhere between the eye, as an organ,
e mind; or more correctly, in a want,
l or total, of a certain perceptive faculty,
f color, as an element of active mind.
n thought the retina or humors of his eyes
be colored, and probably blue; a nice
ortem dissection of his eyes revealed no
mal coloration or appearance whatever.
rinchinetti proposed as a cure the extrac-
f the crystalline lens; but Wilson gives a
f cataract, in which color-blindness super-
l on the extraction of the lens. In one in-

stance, the latter found the difficulty to follow permanently on concussion of the brain; sometimes it was temporary, and dependent on congestion, dyspepsia, or hepatic derangement; most frequently it was congenital. It is more easy to attribute Dr. Dalton's incapacity to defective mental perception, attended with a defect in the cerebral organization, than with Sir John Herschel to suppose it due to a diseased condition of the sensorium.—In the congenital cases, and in some others, the attempt at cure by medicines has been found utterly hopeless; of a cure through education no case is established. The want may be alleviated by carrying about a chromatic scale, named, for purposes of comparison; but little help is thus derived. It is strange that the substitution of artificial for solar light seems as yet to offer decided relief in the largest number of cases; and a draper has been known to keep his shop lighted with gas during the day for this purpose, and with success. Very white light is less useful in these cases; the best being a light yellowed by passing through glass stained with preparations of silver, uranium, or iron. Dr. Wilson found that a good test for persons confounding red and green, and who may be unaware of the fact, was obtained by placing before their eyes a red glass; the beholder is at once astonished at the difference which he discovers in looking at the two colors.

COLORADO, the name of three important American rivers. I. In Texas, originating in the San Saba mountains, lat. 32° N., long. 109° 30′ W., and flowing for the first 200 m. in an E., then in a S. E. direction, until it empties itself into the Matagorda bay, and by one small branch directly into the Mexican gulf. Its length is over 900 m., its width on an average 250 feet, its volume of water nearly like that of the Brazos. Its tributaries are insignificant, the dividing ridge on both sides following the river in too close a vicinity, and for this reason it never can be made navigable for more than 4 months of the year, nor further up than Austin. It is at present navigated for about 300 m. by steamers of a very light draught, and during only a portion of the year. It flows for more than ⅔ of its length through a highly fertile region, and is a beautiful clear stream. It owes its name ("the yellow-reddish") to an interchanging of the names of Colorado and Brazos, which the first discoverer bestowed on these neighboring streams, calling the present Colorado the Brazos de Dios, and the present Brazos the Colorado or muddy. II. A large river having its rise in Oregon, and flowing through Utah, New Mexico, and along the boundaries of California and Arizona. Its extreme northern source is in the Rocky mountains, lat. 44° N., where it is known as the Green river. Between that and the South Pass it receives several small tributaries. In the latter, at an elevation of 7,489 feet above the level of the sea, it receives Big Sandy creek. These streams are only separated by the Rocky mountains from Wind and Sweetwater rivers, the upper tributaries of the Missouri. From this point the course of the Colorado is generally S. W., receiving large accessions from the Grand river, the San Juan, White, Little Colorado, Virgen, Williams, Gila, and lesser rivers. The Mohavé, which was supposed to be a tributary, discharges itself into Soda lake. The accessions, therefore, which the Colorado receives, are almost wholly from the east. Its course, from its source to its point of discharge at the head of the gulf of California, is upward of 1,000 m. About 490 m. above its mouth commences the great defile in the mountains called the Black cañon, 25 m. long, through which the river has forced its way. The banks in many places are very precipitous, from 1,000 to 1,500 feet high, and for a long distance the river is unapproachable. A steamboat under the command of Lieut. Ives, U. S. topographical engineers, ascended the stream early in 1858, and passing a portion of the great cañon reached the head of navigation at the mouth of Virgen river. Few obstacles except shifting sand bars were met on the voyage. The explorations of Lieut. Ives, who traversed the valley of the river from its mouth to lat. 36° N., and the greater part of the regions along lat. 35° and 36° as far E. as the Rio Grande, and the previous reconnoissances connected with the surveys for a railway to the Pacific, have made known interesting facts connected with the region watered by the Colorado. In its valley is found a large extent of fertile bottom land, easily cultivated by artificial irrigation. This valley varies in width from 3 to 8 m. The greater part of it is covered with timber, chiefly cottonwood and mezquit. Other portions are cultivated by the numerous tribes of Indians who live along its banks, affording them an abundance of wheat, maize, beans, melons, squashes, &c. Cotton is also cultivated by such of the Pueblo Indians as are acquainted with the art of weaving. Some portions of the country are uninhabitable; others are rich in silver, copper, and lead, beside containing gold and mercury in small quantities. According to an estimate made by the U. S. officers who have explored the Colorado, there are about 700 sq. m. of arable land between the mouth of the Gila and the 35th parallel of N. latitude. After receiving the Gila, the Colorado takes a sudden turn westward, forcing its way through a chain of rocky hills, 70 feet high and about 350 yards in length. In this passage it is about 600 feet wide, but soon expands to 1,200 feet, which it retains. After sweeping round 7 or 8 m., it assumes a S. direction, and with a very tortuous course of nearly 160 m. reaches the gulf of California. The bottom lands are here from 4 to 5 m. wide, and covered with a thick forest. On the rocky eminence at the junction with the Gila stands Fort Yuma. Near the fort are remains of the buildings of the old Spanish mission established here in the early part of the last century, and in the valley are traces of ancient irrigating canals, which show that it has once been cultivated. As early as the year 1540, Fernando Alarchon, in a voyage to explore the gulf of California, by order of the viceroy of Spain, discovered the mouth of the Colorado, which he describes as "a very mighty river, which ran with so great a fury of stream, that we could hardly sail against it." He fitted out 2 boats with which he then sailed up the river. Father Kino, about the year 1700, also sailed up to the confluence with the Gila, when he established a mission there. The great obstacles to the ascent of the Colorado are the tidal wave at its mouth, which renders it dangerous for any thing but a steamboat of light draught to enter, and the continual shifting of the channel, which has been known to change from one bank to the other in a single night. The average depth from tide water to Fort Yuma is 8 feet. Spring tides rise 25 or 30 feet, and neap tides 10 feet. Regular steamboat communication is kept up between the gulf and Fort Yuma, where there is about 4 feet of water when the river is low, and when full, 13. When very high, it flows back over the California desert, filling up several basins, and what is known as New river. This water remains one or two years, when it is swallowed up by the sands or evaporated by the hot sun. III. (or Cobu Leubu), a river of La Plata, rising in the Andes near lat. 36° S., and flowing S. E. through an imperfectly known country to the Atlantic, which it enters in lat. 39° 51′ S., long. 62° 4′ W.; length about 900 m. In its upper portion it is also known as the Mendoza and the Desaguadero. It discharges itself by several mouths, the principal one having [illegible] fathoms of water at low tide, and is obstructed to seaward by shifting sand banks. At a distance from the sea of 9 leagues by land or 25 leagues by the river, Mr. Darwin found it 60 yards wide in August, but thought it must usually be of double that width. The tide rises at its mouth from 6 to 9 feet.

COLORADO, a S. E. co. of Texas, comprising one of the greatest cotton-growing portions of the state; area 905 sq. m.; pop. in [illegible] 4,349, of whom 1,808 were slaves. It has a fertile soil, well watered by the Colorado and other streams of less note. Its staples are Indian corn and cotton, and the productions in 1850 were 4,771 bales of cotton, 180,270 bushels of Indian corn, 19,700 of sweet potatoes, [illegible] lbs. of tobacco, and 10,660 of wool. There were 2 saw mills, 3 churches, and 165 pupils attending public schools. Value of real estate in 1857, $1,083,980. The Buffalo Bayou, Brazos, and Colorado railroad, completed from Houston to Richmond, is to extend to Columbus, the county seat.

COLOSSÆ, the town to whose inhabitants St. Paul addressed one of his epistles, and the seat of one of the earliest Christian churches of Asia, was a large and important city of Phrygia Major, on the river Lycus. Xenophon speaks of it as being a large and flourishing place at the close of the 5th century B. C. At a still earlier period (B. C. 481), Xerxes pas-d through it on his way to Greece. Colossæ was mous for beautifully dyed wool, and carried n an extensive trade in that article. After the me of Cyrus it seems gradually to have fallen nto decay, until during the middle ages we se sight of it altogether, and a new city called honæ springs up from its ruins. Chonæ has lso disappeared, and has given place to the dern town of Chonos or Khonos.

COLOSSEUM, or Coliseum. See **Amphi- heatre.**

COLOSSIANS, Epistle to the, one of the ller canonical epistles of the New Testament. he universal testimony of tradition, and the lmost universal testimony of internal evidence, eclare this epistle to have been written by he apostle Paul from Rome, about A. D. 62, in nswer to solicitations and inquiries sent by the hurch at the hand of either Epaphras or Tim- thy. From the tenor of the epistle, which has very great similarity to that addressed to the phesians by the same apostle, it is evident that philosophic or Judaistic doctrines, or per- both, had crept into the Colossian church, uch he regarded as endangering the purity of e Christian religion. Some German critics ave contended of late that the epistle was writ- rom Cæsarea before Paul's removal to Rome.

COLOSSUS (Gr. *κολοσσος*), a statue of enor- ous magnitude. Egypt abounded with them. he Memnon and its fellow statue near Thebes above 50 feet high. Babylon was re- wned for her colossi. Xerxes removed from ence a statue of Belus of pure gold, 12 cubits igh. Semiramis is said to have erected of he same metal statues of deities correspond- g to Jupiter, Juno, and Rhea: the first erect, 0 feet high; the second standing, holding a ser- ent by the head in her right hand, and a scep- re in her left; and the third seated in a chariot f gold, before her 2 lions, at her side 2 drag- ns of silver. Before these statues was a table 0 feet long by 15 broad, on which were placed urns, 2 vases for perfumes, and 3 cups of gold, ach of enormous weight. The most celebrated olossus was that at Rhodes. This city had een besieged by Demetrius Poliorcetes, king f Macedon; but, assisted by Ptolemy Soter, ing of Egypt, the citizens repulsed their enemies. To express their gratitude to their noble riends, and to their tutelary deity, they erected brazen statue to Apollo. Chares of Lindus, he pupil of Lysippus, commenced the work; ut having expended the whole amount intrust- d to him before it was half completed, he committed suicide, and the statue was finished by aches. It cost 300 talents ($316,677), and 12 ears were occupied in the work. It was cast iecemeal, and then soldered, for the ancients id not dare to melt a huge mass of metal at nce, fearing it would cool too rapidly. The tatue was 70 cubits high, and hollow, with a winding staircase that ascended to the head, from which Asia Minor could be seen. After stand- ng 56 years, it was overthrown by an earth- uake, 224 B. C., and lay 9 centuries on the ground, and then was sold to a Jew by the Saracens, who had captured Rhodes, after the middle of the 7th century. The metal weighed 720,000 lbs., and loaded 900 camels. In Flaxman's "Lectures" there is an engraving of the head of this colossus. The Rhodian coins also bear a representation of the head. According to Pliny, Rhodes had 100 colossi of inferior size. Phidias erected several colossi. His Minerva in the Parthenon was 39 feet high, composed of gold and ivory. Upon the shield was sculptured the battle of the Athenians and Amazons; on the buskins the battle of the centaurs and Lapithæ; on the pedestal, the birth and history of Pandora. Phidias was not permitted to put his name on the statue, so he cut his portrait on the shield. He likewise erected for the Eleans a statue of Jupiter, 60 feet high. Lysippus, in the time of Alexander the Great, constructed at Tarentum a colossal statue, 60 feet high, which Fabius was anxious to remove to Rome, but was prevented by its weight. The earliest colossus at Rome was that of Jupiter Capitolinus, in bronze, erected by Spurius Carvilius after his victory over the Samnites; but they soon became common. Among others, those particularly distinguished are that of Jupiter in bronze upon the capitol; one in bronze of Apollo, at the Palatine library; another in bronze of Augustus, in the *forum Augusti;* a marble statue of Nero, said to have been 120 feet high, placed in the vestibule of the golden house, afterward supplied with a new head by Vespasian, and converted into an Apollo; and a gilt bronze statue of Domitian as the deity of the sun, in the forum. Dinocrates, a sculptor contemporaneous with Alexander, proposed to carve Mount Athos into a statue of that emperor. The idea was not altogether original, if we may credit Ctesias, who declares that the mount Bagistan, 16 furlongs in height, was covered with enormous bassi-rilievi of the queen Semiramis and her court. This idea of sculpturing mountains into colossi has been proposed in modern times. It was suggested that one of the Alps, near the Simplon, should be sculptured into the resemblance of Napoleon. There are two statues which belong to recent art deserving the name of colossal. One is the statue of San Carlo Borromeo, at Arona, near Milan; it is of bronze, over 60 feet high, and is furnished with a staircase to ascend its interior for the purpose of repairs. The other is that of Bavaria, at Munich, in bronze, 65 feet high, with a pedestal of 30 feet; it was designed by Schwanthaler. Statues exceeding life size, as that of Peter the Great at St. Petersburg, Charles Fox in London, Sully, Colbert, L'Hôpital, and D'Aguesseau in Paris, are not of sufficient magnitude to be classed with the colossal. Perhaps the most beautiful specimens of modern art which ought to be mentioned with the ancient colossi, are the 4 statues at Rome, symbolical of 4 rivers: the Ganges, sculptured by Francesco Barratta; the Nile, by Antonio Fancelli; the Danube, by Claude Franc; and the Rio de la Plata, by Antonio Raggi.

COLOT, Germain, the first French surgeon who ventured to extract stones from the bladder, lived in the 2d half of the 15th century. The method of operation which he employed was kept secret, and is still unknown; but it is generally supposed to have been that which is now termed lateral incision. He was allowed to make his first experiment on an archer who was condemned to death, in the reign of Louis XI.; and the operation, having proved successful, gave an impetus in France to the study and practice of that branch of surgery.—Several other members of the same family were also eminent during the 16th and 17th centuries; and François, who died June 25, 1706, wrote a work entitled *Traité de l'opération de la taille*, &c. (Paris, 1727).

COLQUHOUN, Patrick, a British statist, born at Dumbarton, Scotland, March 14, 1745, died in London, April 25, 1820. In early life he went to America, but returned to Scotland in 1766. On the outbreak of the American war he contributed to a fund for raising a regiment against the colonists. In 1782 he was elected chief magistrate of Glasgow. In 1789 he removed to London, and in 1792 was appointed a police magistrate. He published "A Treatise on the Police of the Metropolis" (London, 1796), of which, according to the testimony of Bentham, 7,500 copies were sold within 2 years, and a German translation appeared in Leipsic in 1800. Among the most important of his other writings are: "A Treatise on the Police of the River Thames," "A New System of Education for the Laboring People," "A Treatise on Indigence," and "On the Population, Wealth, Power, and Resources of the British Empire" (London, 1814; German translation, Nuremberg, 1815).

COLQUITT, Walter T., an American lawyer and statesman, born in Halifax co., Va., Dec. 27, 1799, died in Macon, Ga., May 7, 1855. He was graduated at Princeton college, N. J., studied law at Milledgeville, Ga., and was admitted to the bar in 1820. He became prominent in 1826 in an unsuccessful contest as candidate for congress, and was soon after elected judge of the Chattahoochee circuit, to which station he was reëlected in 1829. As an advocate, especially in criminal cases, he was without a rival in Georgia. In 1838 he was elected representative in congress, and in the presidential election of the next year he and 2 of his colleagues supported Mr. Van Buren, and thus severed their connection with the whig party. He was, however, sustained by his constituency, being reëlected in 1840 as representative, and in 1842 was elected U. S. senator. He supported the Polk administration in the controversy relative to Oregon, and throughout the Mexican war. He was prominent in opposition to the Wilmot proviso, and was one of the most earnest speakers in the convention called at Nashville in 1850 for the purpose of maintaining what were deemed the constitutional rights of the South.

COLT, Samuel, an American inventor, born at Hartford, Conn., July 19, 1814. He received a good English education in the schools of his native city, but even when a child preferred the workroom to the schoolroom. At the age of 10 he entered a factory belonging to his father, and remained there for most of the time till his 14th year, when he was sent to school at Amherst, Mass., but ran away from the school, and in July, 1829, shipped as a boy before the mast on an East India voyage. After his return he served a short apprenticeship in a factory at Ware, Mass., in the dyeing and bleaching department, where he learned something; after which, under the assumed name of Dr. Coult, he traversed every state and visited almost every town of 2,000 inhabitants or over, in the union and British North America, lecturing on chemistry. In this way he earned a considerable sum of money, which was devoted to the prosecution of the invention of his revolver, the germ of which he had already devised while on his voyage to Calcutta. The first model of his pistol, made in wood in 1829, while he was a sailor boy, is still in existence. He was now enabled to manufacture other models, which in their practical results exceeded even his own most sanguine expectations; and in 1835, when only 21 years of age, he took out his first patent for revolving firearms. Before obtaining his patent in this country he visited England and France and secured patents there. At this time, and indeed for several years after, he was not aware that any person before himself had ever conceived the idea of a firearm with a rotating chambered breech. On a subsequent visit to Europe, while exploring the collection of firearms in the tower of London, and other repositories of weapons of war in England and on the continent, he found several guns having the chambered breech, but far more liable to explode prematurely and destroy the man who should use them than the objects at which they might be aimed. Unwilling, however, to seem to claim what had been previously invented, he read before the institution of civil engineers in England, in 1851, an essay on the subject, in which he described and illustrated with appropriate drawings the various early inventions of revolving firearms, and demonstrated the principles on which his were constructed. Patents having been issued in England, France, and the United States for the revolver, as it was called, he succeeded in inducing some New York capitalists to take an interest in the invention, and a company was formed at Paterson, N. J., in 1835, with a capital of $300,000, under the name of the patent arms company. The company expended about $300,000 in machinery, in the manufacture of the arms, and in improvements in them. In 1837, during the Florida war, a few of the troops, under the direction of Lieut.-col. (now Gen.) Harney, were armed with Colt's revolvers. In 1842 the patent arms company were forced to suspend, and from that time till 1847 none of the repeating firearms were manufactured. In 1847, the Mexican war having

ed, Gen. Taylor sent Capt. Walker, of
an rangers, to Mr. Colt to procure a
There were none to be had; the col-
d parted with his last sample to one of
an rangers, and when the government
d 1,000, after advertising in vain for one
e as a model, he was compelled to make
model, and in so doing incorporated into
improvements which the experience of
y officers suggested. This first 1,000
at an armory temporarily hired, at
le, near New Haven, Conn. Other
lowing immediately on the completion
. Colt procured more commodi-
at Hartford, and commenced
own account. The extraordi-
ation to California, and afterward
, greatly increased the demand for
vers. Finding that more room and
lities for manufacturing were re-
planned in 1850, and subsequently
he project of erecting an armory un-
d in the world in extent and perfection
. Within the corporate limits of
rd, and south of the Little or
er, lay a tract of meadow of about 250
a extent, which, owing to its being flood-
annual freshets of the Connecticut
available only for grazing purposes,
for these only at certain seasons of
. This tract he purchased and sur-
with a dike or embankment, about 2
length, 150 feet wide at the base, from
t the top, and from 10 to 25 in height.
of this dike having been tested by
et, and it having been further pro-
by covering the sides with willows, he
within it his armory, of Portland stone,
ing of 2 main buildings connected by a
building, with other buildings for of-
warerooms, watchmen's houses, &c. In
tablishment there is ample accommoda-
r the manufacture of 1,000 firearms per
The number made in 1858 was about
A part of the establishment is devoted
manufacture of Colt's machinery for
these firearms elsewhere, which has
supplied a large portion of the machine-
the armory of the British government at
, England, and the whole of that for the
government armory at Tula. On the
closed by the dike he has also erected
ous dwellings for his employees, and ware-
for other kinds of business; the entire
iture upon the grounds and buildings
ting to more than $1,000,000. Soon after
xican war, suggestions derived from the
these arms by the military force led to
ve improvements in their construction,
were then patented, and to their adoption
government of the United States as a
weapon for the army. Since the Cri-
and Indian campaigns, further improve-
and simplifications in the construction
een suggested, which render the arm
atively perfect. All the accessories of these arms, balls, cartridges, bullet moulds, powder flasks, lubricators, &c., are manufactured at the armory, and most of them, as well as the greater part of the machinery for manufacturing the arms, are the invention of Mr. Colt, or the development of his suggestions by some of his skilful workmen. Amid his other cares, the intellectual and social welfare of his numerous employees has not been forgotten. Few mechanics are favored with as convenient residences as those he has erected for them; they have a public hall, a library, courses of lectures, concerts, &c. Mr. Colt has also invented a submarine battery of great power and efficacy, and is one of the inventors of the submarine telegraphic cable, having laid and operated with perfect success, in 1843, such a cable from Coney island and Fire island to the city of New York, and from the merchants' exchange to the mouth of the harbor. This cable was insulated by being covered with a combination of cotton yarn with asphaltum and beeswax, and the whole enclosed in a lead pipe, gutta percha being then unknown. A portion of it is still in existence.

COLTON, Calvin, an American clergyman and political writer, born at Longmeadow, Mass., in 1789, died at Savannah, Ga., March 13, 1857. He was graduated at Yale college in 1812, studied theology at Andover, and was ordained and settled in the Presbyterian church at Batavia, N. Y., in 1815. On account of the failure of his voice, he relinquished preaching in 1826, began writing for religious periodicals, and went to England in 1831 as correspondent of the "New York Observer." He published several works calculated to diffuse among Englishmen a knowledge of the resources of the United States and of the character of their institutions. On his return in 1835, he gave to the public his "Four Years in Great Britain." About this time he became a member of the Episcopal church. He took orders, and wrote a book in explanation, entitled "Thoughts on the Religious State of the Country, and Reasons for preferring Episcopacy." But soon returning to his former occupation, he was for several years a voluminous and prominent writer of political pamphlets and fugitive pieces upon questions of interest at the time, in which he presented the views of the whig party, and which were thought to have exerted an important influence. Those which had the widest circulation were a series called the "Junius Papers," published originally in 1840, which were considered worthy of a republication, with additions, in 1844. He edited also a newspaper in Washington, from 1842 to 1844, and in 1846 published the "Life and Times of Henry Clay," a work of interest, and for which he had access to the papers and materials of his subject, for whom he entertained the highest admiration. He afterward engaged in the preparation of a collection of Mr. Clay's speeches, which he had just completed at the time of his death. His most considerable work was

"Public Economy for the United States," published in 1848, which included an elaborate argument for the protective policy. His last original publication was "The Genius and Mission of the Protestant Episcopal Church in the United States" (1853). In 1852 he was appointed to the professorship of public economy in Trinity college, at Hartford, Conn.

COLTON, Charles Caleb, an English writer, born in 1780, died by his own hand at Fontainebleau, April 28, 1832. He was graduated at Cambridge in 1801, was afterward chosen fellow of King's college, and in 1818 obtained the vicarage of Kew and Petersham. But his private life destroyed all the hopes formed from his brilliant abilities. He became a gambler and debauchee, and was at last so sunk in character, and so beset by his creditors, that he was obliged to abandon his profession, and to fly to America, whence he betook himself to Paris, where he acted for a time as correspondent of the London "Morning Chronicle." He wrote a poem, "The Burning of Moscow," "The Soul," and some critical remarks on Lord Byron. His most generally known work is "Lacon" (1820), a collection of ethical aphorisms, which passed through many editions. Suffering from pecuniary embarrassment, and enfeebled by a disease which could not be cured without a painful operation, he put an end to his sufferings by blowing out his brains.

COLTON, George Hooker, an American writer, born at Westford, Otsego co., N. Y., Oct. 27, 1818, died in New York city, Dec. 1, 1847. He was graduated at Yale college in 1840, and immediately after engaged as a teacher in Hartford, where he wrote the poem of "Tecumseh, or the West Thirty Years since," which was published in 1842. He delivered a course of lectures on the American Indians in 1842–'43, and a poem before the Phi Beta Kappa society at Yale college in 1844, and in 1845 started the "American Review" in New York, which he conducted till his death.

COLTON, Walter, an American clergyman and writer, born in Rutland, Vt., May 9, 1797, died in Philadelphia, Jan. 22, 1851. He was graduated at Yale college in 1822, at Andover theological seminary in 1825, and became professor of moral philosophy and belles-lettres in Capt. Partridge's academy at Middletown, Conn. In 1830 he resigned this professorship and became editor of the "American Spectator and Washington City Chronicle," in which he opposed Jackson's policy in the removal of the Georgia Indians. He preached occasionally at the church which President Jackson attended, and the latter offered him the choice of a chaplaincy in the U. S. navy, or a foreign consulate. He chose the former, and entered upon the duties of the office, Jan. 29, 1831. In the following year he was ordered to the Mediterranean, and while on that station gathered the materials for his "Ship and Shore in Madeira, Lisbon, and the Mediterranean" (New York, 1835), "Visit to Athens and Constantinople" (1836), "Land and Lee in the Bosporus and Ægean" (1851), and "Notes on France and Italy" (1851), of which the last two were published after his death. In 1835 he was assigned to the naval station at Charlestown, Mass. In 1837 he edited for a few months the "Colonization Herald." In 1838 he was assigned to the chaplaincy of the naval station at Philadelphia, where he became one of the editors of the "Independent North American" newspaper, and wrote a pamphlet which was published under the title of "The Bible in Public Schools." In 1845 he was ordered to the Pacific coast in the frigate Congress. On July 28, 1846, he was appointed alcalde of Monterey by the American military authorities. Having discharged the duties of this office for nearly 2 months under a military commission, he was elected by the citizens of Monterey as alcalde or chief judge, with a jurisdiction extending over 300 m. of territory. He established the first newspaper printed in California, which is now published in San Francisco under the title of the "Alta California." He built the first school house in California, and also a large hall for public meetings, which was named Colton Hall. The announcement of the discovery of gold in the Sacramento valley was made in May, 1848, in the Philadelphia "North American," in a letter bearing his initials. In 1849 he returned to Philadelphia with impaired health, and his works entitled "Deck and Port," and "Three Years in California," appeared in the year preceding his death.

COLTSFOOT (*tussilago farfara*), an herb growing wild in Europe and North America; found in this country in the northern and middle states. Though the whole plant is used, its virtue is principally in the leaves. These are gathered and dried, and used generally in the form of a decoction. Coltsfoot is employed in pulmonary complaints, and is said to have been smoked by the ancients in affections of the lungs. It has sometimes been found beneficial in scrofulous diseases.

COLUBER, a genus of ophidian reptiles, characterized by an elongated head, distinct from the neck, and covered above with smooth polygonal plates; the snout rather rounded; the eyes large, and the pupil round; the body long, cylindrical, and tapering, covered above with rhomboidal scales, generally smooth, but sometimes carinated; the tail has always double plates on the under surface; the plates of the abdomen are transverse; the jaws furnished with numerous sharp teeth, directed backward, without poisonous fangs; some species are oviparous, others ovoviviparous. In the old Linnæan genus *coluber* were included all ophidians having double plates on the under surface of the tail; this embraced many venomous serpents; the genus has since been restricted by Boie, Schlegel, and others, so that it now forms a very natural one, recognized rather by its general than by any isolated characters. Its numerous species are found in most parts of the globe

any ophidians can exist; they are gen-
errestrial, rarely entering the water unless
ecessity; most of them climb trees easily,
they lie in wait for their prey; some are
in marshy districts, some in thick woods,
open sandy plains, and the locality im-
various habits of life upon them; they
lly pursue small mammals, birds, and rep-
They attain a considerable size, sometimes
of 8 feet. The abdominal plates and
are exceedingly numerous, sometimes
y as 800. The sides of the snout are
concave, and the plates over the eye are
prominent, giving to their physiognomy
xpression, which is confirmed by the
of many of the species living in the
y man. The colors are rarely brilliant,
shading into black or green being the
ling tints; some are striped or spotted,
l undergo considerable changes in their
to maturity. Among the best known
is the one dedicated to Æsculapius (*C.*
spii, Lacép.), emblem of the sagacity and
bestowing qualities of the great physician;
this country, the black snake (*C. con-*
r, Linn.); the corn snake (*C. guttatus*,
chicken snake (*C. eximius*, Dekay);
ke (*C. Couperi*, Holbrook); the
(*C. vernalis*, Dekay); the ringed
punctatus, Linn.); the striped snake
talis, Linn.); and the brown snake (*C.*
tus, Linn.).

UMBA, Saint, a native of Ireland, suppos-
ave been born about the year 521, and of-
led the apostle of the highlanders. In 565
his native land with the design of preach-
e gospel to the Picts, and after visiting
, finally established himself in the island
, then called Hy. Bridius, the Pictish
t first refused to listen to his preaching,
en commanded the gates of his abode to
t in his face. The saint besought God to
his mission by a miracle, and at once the
flew open; whereat the king was so im-
l that he made Columba a present of the
Here the missionary founded a mon-
which soon attained a wide-spread re-
The sanctity of his own life, his miracles,
many prophecies recorded of him, gained
eat influence among both Picts and Scots.
aid to have accurately foretold the victory
lan over the Picts and Saxons. After
g in his island 2 kings of Scotland, Con-
and Kinnatil, and crowning a third, he
oaded with years and virtues, and was
d by his disciples in the monastery which
ded, and of which he had been the
oot. Many years after, his body was
ted to Down and deposited beside the
s of St. Patrick and St. Bridget. His
is said to have occurred in 597. The
ona, derived from a Hebrew word signi-
dove, was given to the island of Hy in
to his name.

UMBANUS, Saint, a missionary of the
ntury, died Nov. 21, 615. A native of Ireland, according to most historians, he was educated in the monastery of Bangor, in Ulster, where he is said to have made a translation of the Psalms. In 590 he went to France in company with 12 youths destined for the ecclesiastical state, and took up his abode in a ruined castle in the Vosges. The learning and piety of Columbanus and his disciples, suffering in their dilapidated quarters every kind of privation, did not long remain unnoticed. Crowds of persons flocked to listen to their teachings, and convents soon sprung up under their care at Luxeuil and Fontaine. Over the monastery at the former place Columbanus presided for 20 years. A difference respecting the celebration of Easter involved him in a controversy with the pope, but he ultimately submitted to the authority of Rome. The boldness, however, with which he rebuked the immoralities of Thierry II., king of Burgundy, drew upon him the enmity of Brunehaut, grandmother of that monarch. The Burgundian nobles, who saw in his austerity and purity of life a constant reproach for their own vices, regarded him with equal animosity, and readily joined the queen in her efforts to procure his banishment. He was ordered to return to Ireland, and with a few chosen followers set out and crossed the frontier into Switzerland, where he was kindly received, and made many converts among the pagan inhabitants. On the defeat of the Swiss by the Gauls, he was forced to remove again, and accordingly journeyed into Italy, where he founded the monastery of Bobbio in 615. The order of the Columbans continued to exist until the commencement of the 8th century, when it was united to that of the Benedictines.

COLUMBARIUM, the sepulchral chamber in which the Romans deposited the ashes of their dead. The niches in which the cinerary urns were placed were called *columbaria*, from their resemblance to a dove cote.

COLUMBIA, the name of counties in several of the United States. I. An E. S. E. co. of N. Y., bounded E. by Mass. and W. by the Hudson river; area, 620 sq. m.; pop. in 1855, 44,391. Several small streams within its limits afford good water power. In the E. part the surface is hilly, but in the W. and central portions it is generally level. The soil is fertile and highly cultivated. Iron, lead, limestone, slate, and marble are obtained in various places, and at New Lebanon are warm springs which are much resorted to. The productions in 1855 were 8,560 bushels of wheat, 548,084 of oats, 383,340 of Indian corn, 65,108 tons of hay, 1,347,428 lbs. of butter, and 67,167 of cheese. There were 48 grist mills, 21 saw mills, 1 carding mill, 12 cotton factories, 6 woollen mills, 15 paper mills, 8 tanneries, 4 furnaces, 8 newspaper offices, 85 churches, and 180 school houses. The Western, Hudson river, and Harlem railroads pass through the county. Organized in 1786. Capital, Hudson. II. An E. co. of Penn., intersected by the north branch of the Susquehanna, and drained by Catawissa and Fishing creeks; area, 875 sq. m.; pop. in 1850, 17,710. Knob mountain, Catawissa mountain, and the Muncy hills, which traverse the county, are branches of the Alleghany range, and are wholly unproductive. The valleys lying between them are very fertile, and some of the uplands are also fit for cultivation. Limestone and iron ore are found in great abundance. The productions in 1850 were 153,760 bushels of wheat, 160,364 of oats, 199,530 of Indian corn, 12,884 tons of hay, and 368,055 lbs. of butter. There were 72 saw mills, 33 grist mills, 4 iron founderies, 6 furnaces, 5 woollen factories, 2 paper mills, 18 tanneries, 10 iron mines, 16 stone quarries, 3 newspaper offices, 38 churches, and 4,558 pupils attending public schools. The North Branch canal and the Catawissa, Williamsport, and Erie railroad pass through the county. Organized in 1813. Capital, Bloomsburg. III. An E. co. of Ga., separated from S. C. by the Savannah river, bounded N. W. by Little river, and traversed by the Georgia railroad; area, 500 sq. m.; pop. in 1852, 11,920, of whom 8,405 were slaves. It has an uneven surface, and a soil once fertile but impaired by improper tillage. A gold mine near Little river has been worked profitably. The productions in 1850 were 11,336 bales of cotton, 434,777 bushels of Indian corn, 94,641 of oats, and 78,115 of sweet potatoes. There were 3 saw mills, 1 tannery, 1 manufactory of agricultural implements, 20 churches, and 490 pupils attending academies and schools. Value of real estate in 1856, $1,680,789. Formed in 1790 from a part of Richmond co. Capital, Appling. IV. A N. E. co. of Florida, bordering on Georgia; area, 2,560 sq. m.; pop. in 1850, 4,808, of whom 1,266 were slaves. The Suwanee river bounds it on the N. W., the St. Mary's on the N. E., and the Santa Fé on the S. The surface for the most part is level, and the soil sandy. Pine woods occupy much of the land. The productions in 1850 were 802 bales of cotton, 179 hogsheads of sugar, 5,162 gallons of molasses, 112,090 bushels of Indian corn, 51,973 of sweet potatoes, and 138,180 lbs. of rice. There were 1 grist mill, 1 saw mill, 17 churches, and 162 pupils attending public schools. Capital, Alligator. V. A S. W. co. of Arkansas, bordering on Louisiana and Texas, and drained by Red river; area, 376 sq. m.; pop. in 1854, 5,913, of whom 4,238 were slaves. The surface is level, and the soil fertile. The productions in 1854 were 3,860 bales of cotton, 88,311 bushels of Indian corn, 1,758 of wheat, and 2,731 of oats. It was formed in 1853 from a part of Lafayette co. Capital, Calhoun. VI. A S. co. of Wisconsin, intersected by the Wisconsin and Neenah rivers; area, 751 sq. m.; pop. in 1855, 17,965. The surface is rolling or hilly, and the soil rich. The Wisconsin is navigable by steamboats to Winnebago Portage, whence a canal connects it with the Neenah, here only 1½ m. distant. The productions in 1850 were 169,369 bushels of wheat, 120,279 of oats, 77,380 of Indian corn, 51,249 of potatoes, 13,497 tons of hay, and 168,370 lbs. of butter. There were 7 saw mills, 18 churches, and 1,361 pupils attending public schools. The county was organized in 1846. Capital, Portage City.

COLUMBIA, a post borough of West Hempfield township, Lancaster co., Pa., situated on the Susquehanna river, at the terminus of the Philadelphia and Columbia railroad, and of the eastern division of the state canal; pop. in 1854, 6,000. The Columbia branch railroad connects it with Harrisburg, and another with York and Baltimore. It is the principal depot of the lumber which is rafted down the Susquehanna, and in population and importance is the second town of the county. It contains a town hall, a market house, 9 churches, a bank, an academy, a weekly newspaper office, a library, several extensive warehouses, boat yards, machine shops, &c. It is supplied with water in pipes from some springs in the vicinity. The banks of the river on which it stands are high and sloping. A fine railway bridge, 1¼ miles long, connects Columbia with Wrightsville. Incorporated in 1814.

COLUMBIA, the capital of the state of South Carolina, and seat of justice for the district of Richland, stands on the E. bank of the Congaree, just below the confluence of the Broad and Saluda rivers; pop. in 1854, 8,000. It occupies a plain some 200 feet above the bed of the river, in a very imposing and beautiful situation, and is one of the handsomest towns in the state; is well laid out in regular squares, well built with streets 100 feet wide, and covers an extent, each way, of more than 2 miles. It is the seat of South Carolina college, a well endowed institution, founded in 1804, having an annual appropriation of about $25,000, with 8 professors, and a library of 25,000 vols.; of a state lunatic asylum, a theological college of the Presbyterian church of South Carolina and Georgia, a military school, and several academies. Columbia enjoys considerable trade, and is a town of much opulence. It contains the state house, a court house, market house, 3 banks, 7 churches, and a state arsenal. There are 3 daily, 2 tri-weekly, and 3 weekly newspapers published here. Good water is raised from springs by steam power and distributed in iron pipes. The river is navigable to this point, and the city is connected with Charleston, Augusta, Wilmington, and other places, by the Columbia branch of the S. C. railroad, and by the Greenville and Columbia and the Charlotte and S. C. railroads.

COLUMBIA, the capital of Maury co., Tenn., a beautiful and prosperous post village, on the left bank of Duck river; pop. in 1850, 2,[illegible]. The surrounding country is fertile and productive, and very populous. The town has a good trade, and is noted for the excellence of its schools. It contains 2 banks, 2 newspaper offices, and 2 churches. The Tennessee and Alabama railroad, now in progress, will pass through it. It is the seat of Jackson college, and of 2 female seminaries. The Maury female

y is a handsome edifice with beautiful
ensive grounds. Columbia was the res-
f President Polk previous to his election.
UMBIA, a beautiful and prosperous vil-
easantly situated in a populous and fer-
ion in the state of Missouri, the capital
. and the seat of the state university.
y building is a large and elegant
re, erected at an expense, including the
the land, of $120,000, the whole of
ayed by the citizens of the county.
BRITISH, a British colony, estab-
1858, on the Pacific coast, formed of
resumed by the crown from the Hud-
company, comprising the districts hith-
n by the various names of New Cale-
w Georgia, New Norfolk, and New
l lying between the Rocky moun-
Pacific ocean. It is bounded S. by
n frontier alike of Washington terri-
l the United States, viz., the 49th par-
north latitude; W. by the North Pacific
N. by Simpson's river and the Finlay
of the Peace river, following nearly the
55th parallel; and E. by the Rocky
which, running in a direction from
E., from long. 120° to 118° W., form
defined natural boundary between the
and the more eastern British pos-
It extends in a straight line about
from N. to S., and varies in breadth
o 350 m. Including Queen Charlotte
contains an area of 200,000 sq. m.
line is deeply indented. Vancou-
extends from lat. 48° 19′ to 50° 58′
ce of 278 m., along the southern
the mainland, from which it is sepa-
the gulf of Georgia, 90 m. in width.
entrance to the gulf is Johnston's
the southern entrance is the strait of
uca, which separates the south shore
sland from the territory of the United
Queen Charlotte island, lying between
and 54° N., long. 131° 25′ and 134° W.,
nprised within the organization of the
is separated from the northern por-
the coast by Queen Charlotte sound.
the governor of Vancouver has tem-
ction over the whole territory,
Vancouver is not at present in-
hin the appellation of Columbia.—The
on of this colony was consequent upon
overy of gold, and the influx of popu-
hich that circumstance occasioned. Its
advantages and geographical position
wever, such that population was alone
to demonstrate its importance. The
overnment was informed by letter, dated
6, 1856, from Gov. Douglas of Van-
colony, that there was reason to believe
d been found in New Caledonia. Little
as at first taken of the statement. A
tried the adventure of gold-hunting
ore or less success. Accounts of the
d richness of the new gold fields being
to California, extraordinary excitement was the consequence. On April 20, 1858, 450 miners set out by steamship from San Francisco for Fraser river, the new El Dorado; before June 9, 2,500 had left California, and 5,000 more were on the way by sea or land route. Many set out by land from Shasta and Yreka, through Oregon, which route was found to be no more than 18 days' journey. It was computed that the immigration before the close of the year would number 50,000 persons; but from the most careful estimate it does not appear that at any time more than 20,000 Californians were actually in the country. The governor of Vancouver's island, on the first influx, took prompt measures to secure to the British government the royalty of the minerals by imposing a license tax, and to maintain the Hudson's Bay company's monopoly by forbidding the importation of goods other than through the company's agencies. He also forbade to foreign ships the navigation of the Fraser river. On July 8, 1858, Sir Edward Bulwer Lytton, secretary of state for the colonies, brought before the British house of commons a bill which became law, Aug. 2, and is to remain in force till the end of 1862, constituting the colony of British Columbia, with the boundaries above specified. A clause confers the power to unite the colonies of Vancouver and Columbia when circumstances shall demand. Up to June 28, 1,800 miners, mostly citizens of the United States, had paid the tax, and several parcels of goods belonging to American traders had been seized under the governor's proclamation. Meantime, Gov. Stevens, delegate to congress from Washington territory, called the attention of the U. S. government to the "imposition" that had been practised on American immigrants, insisting particularly on the point that the governor of Vancouver's island had no legal jurisdiction over the mainland wherein the mines were situated. The matter was brought before the British government by the American minister at London. In reply (July 1, 1858), the British government sustained the governor of Vancouver's island in the steps he had taken; reserved the question of the navigation of Fraser river; expressed a "desire to deal liberally with the citizens of the United States," and promised to take legal counsel as affecting the rights of the Hudson's Bay company. The governor, at the same time, was instructed to pursue a liberal policy, and had impressed on him "the importance of caution and delicacy in dealing with those manifold causes of international relationship and feeling which are certain to arise."—The auriferous region yet explored is confined to a portion of the course of Fraser river and its tributary, Thompson's river. The mountains in which the latter has its rise being similar in geological formation to the Sierra Nevada of California, the inference is that these rivers bring their golden sands from the hills in about lat. 53° to 54° N., long. 121° W. The locality hitherto explored extends but little from the river's bank, and has not as yet reached a much greater distance up the streams than 200 miles from the

sea. The richest placers are conjectured to lie on the table-land between Fraser and Columbia rivers. Hitherto the amount of treasure exported has been comparatively small. Thompson's river is considered richer in gold than Fraser, but it is altogether in the hands of the hostile Indians. The gold is mostly in grains, few large pieces or "nuggets" having been found. It is stated, on the recent knowledge of Gov. Douglas, that 3 men who had been absent but a week from Victoria returned with 179 oz., the produce of their own labor. As a set-off, it is on record that for the first 8 months of the digging on Thompson's river, to Feb. 1858, only 500 oz. in all had been exported, while during the first 8 months of the California mines their export was 150,000 oz. Hitherto the search has been confined to "washing," and it is believed that the richest district has not been reached. Quartz crushing has not yet been undertaken. Gold exists in Queen Charlotte island, but in what quantity is unknown. The discovery was made in 1850, and in 1852 further specimens were obtained by Capt. Rooney, of the schooner Susan Sturge, of San Francisco. The island is unexplored, and the Indians both fierce and hostile. Reports are likewise current of gold discoveries in Vancouver's island, but it is yet a matter of doubt whether they are well founded.—The elevated northern territory of the Hudson's Bay country is peopled by 2 great tribes, the Takali or Carrier Indians, and the Atnalis and Shouswaps. The Indians are divided into different tribes, which do not amalgamate, but which are all offshoots of the Carrier race, and speak dialects of that language, itself being a branch of the Chippewayan. The coast Indians are the Clatsets in the Puget's sound district; the Coquilths, further north; further still, the remains of the Nowette tribe; and at Seal harbor, the Sebassa and Nass. All the coast dwellers have a smattering of English. The Indians on the upper Fraser and Thompson's rivers are the Talkotins, Slowercuss, Dinais, Nascud, and Dinnee tribes. They are many in number, and are stalwart and intelligent.—The Rocky mountains, as already mentioned, form the eastern boundary. Their highest summits are Mt. Hooker, 15,700 feet, and Mt. Browne, 16,000 feet. About midway between the Rocky mountains and the coast a continuation of the Cascade mountains of Washington territory traverses the country from N. to S. Contiguous to the coast is another lofty range extending N. into the Russian territory. The principal rivers are the Fraser, with its western tributaries, the Stuart, Chillcoaten, and Pinklitsa, and its eastern, Thompson's river, and others. The Columbia river also has its rise within the colony, and flows some distance southward to the United States. The Fraser rises between lat. 55° and 56° N., and flowing southward and westward, receives several tributaries of magnitude. Thompson's river rises in the Rocky mountains, flows westward, and joins the Fraser at the Forks. In lat. 50° the latter breaks through the Cascade range in a succession of falls and rapids. The river above the falls is shallow and swift. It drains the easterly slope of the Cascades, and the westerly slope of the Rocky mountains. Next to the Columbia, Fraser is the largest river on the Pacific coast. In a right line it is less than 500 m. in length; but with its meanderings, 800 m. The river is navigable by steamer to Fort Hope, 150 m. from the sea, and at times to Fort Yale, 12 m. higher, by craft drawing not more than 12 feet water. The united streams, under the general name of the Fraser river, flow into the sea opposite the S. end of Vancouver's island, and within a few miles of the United States line. The Hudson's Bay company has several forts on the river. Fort St. James stands at the outlet of Stuart's lake; George, on the head waters of the river; Alexander, in lat. 53° N.; Yale, near the Forks; Hope, 150 m. and Langley, 80 m. from the sea. Fort Thompson is situated on the river of the same name; Forts McLoughlin and Simpson are on the coast.—The districts fit for agricultural settlement are thus estimated: On Fraser and Thompson's rivers, 60,000 sq. m.; sources of the upper Columbia, 20,000; Athabaska district, 50,000; Vancouver's island, 16,000. The tract extending from Thompson's river to the Rocky mountains is described as eminently suitable for colonization. It possesses abundance of timber and of bituminous coal, is diversified by hill and dale, watered by numerous streams and lakes, and has boundless pasturage. The soil, as elsewhere throughout the country, varies from a deep black vegetable loam to a light brown loamy earth, the hills supplying slate and building stone. The land on the lower course of Fraser river is also good. Wheat, barley, potatoes, turnips, and English fruits, especially apples and pears, are cultivated at the trading posts. Generally speaking, the climate is milder than in the corresponding latitude eastward of the mountains. On the coast the winter is more humid than cold. From the middle of October till March there is much rain, with high winds. Winds from the S. and S. E. bring rain, and from the N. and N. W. fair weather. The central and eastern districts have, from their elevation, a severer climate, and in the upper country the thermometer in winter sometimes indicates 20° below zero. Coal abounds over the whole territory. At McNeil's harbor and elsewhere, the seams have been laid bare by the sea. In general the beds either crop out from the surface, or lie immediately beneath it, such as have been discovered being not usually more than from 10 to 18 inches thick, and in rare cases 2 or 3 feet. Rock crystals, cobalt, talc, and iron ore have been found in or near Fraser river. The country is rich in fur-bearing animals, of which the principal are the black, brown, and grizzly bears, lynx, marten, and beaver. It has hitherto been the richest fur district of the Hudson's Bay company, the annual product being 5,000 beaver skins, with other furs. Fish abound in the lakes and rivers; salmon are especially plentiful, and of 4 species, the largest being from 10 to 20 lbs. in weight. They proceed up the Fraser river in countless thousands, till stopped by shallow water, few of them returning to the sea.—Victoria, the present and doubtless the future capital, is distant from Honolulu 2,370 m.; Japan, 4,400; Shanghai, 5,800; Canton, 5,900; Sydney, New South Wales, 7,230; Singapore, 8,200; New York *via* Panama, 6,100; San Francisco, 800; Halifax *via* Quebec, 2,466. Estimates recently laid before the British government show that by the establishment of a line of mail steamers on the Pacific, Victoria might be placed within 35 days from Liverpool *via* New York and Panama. Miss Burdett Coutts contributed £15,000 for the endowment of a bishopric in Columbia, and the Rev. George Hills was appointed bishop in Nov. 1858.

COLUMBIA, District of. See District of Columbia.

COLUMBIA COLLEGE, an ancient seat of ning in the city of New York, originally called King's college. From the records of Trinity church, it appears that in 1703 the rector and dens were directed to wait upon the governor, Lord Cornbury, to know what part of the king's farm had been intended for the college which he had designed to have built. It seems also to have been Berkeley's intention to trans the institution of learning intended for Ber to New York, in 1729. Not, however, till [illegible] was an act passed for raising £2,250 by lottery "for the encouragement of learning, and toward the founding of a college." By other lar acts this sum was increased in 1751 to [illegible]43, and vested in 10 trustees, one of whom was a Presbyterian, 2 were of the Dutch Reformed communion, and 7 were Episcopalians, some of whom were also vestrymen of Trinity church. Shortly after was offered any reasonable quantity of the church farm for "erecting and use of a college." There was, however, still a few years' delay, and a division of part of the funds, occasioned by the struggle through the press and in the legislature, arising from the dread of a church establishment in this country similar to that in England, led on one side by William Livingston, who contended that a seminary of learning should have no connection with any religious society whatever. The powerful aid of the new governor, Sir Charles Hardy, who arrived in 1755, and subscribed £500 to the college, decided the controversy in favor of the church party. Previous to this, in 1753, the trustees had invited the Rev. Dr. Samuel Johnson of Stratford, Conn., to become the president of the proposed college, with a salary of £250, and the assurance of their belief that the vestry of Trinity church would make an adequate addition. The royal charter constituting King's college, which passed the seals Oct. 31, 1754, was presented by Lieut. Gov. De Lancey to the gentlemen named in it as governors of the college, who consisted of the archbishop of Canterbury, the principal civil officers of the colony, the principal clergy of the 5 religious denominations in the city, and 20 private gentlemen, from all of whom descended well-known families. Money was collected in England, and books were sent out. The chief contributor here was Mr. Joseph Murray, who gave property worth £8,000, including his library. The college opened, July 17 of the above-named year, with a class of 10, under Dr. Johnson's own instruction, in a large vestry room belonging to Trinity church. The first tutor was his son, who, dying soon after, was succeeded by Mr. Cutting, a student of Eton and Cambridge, in England; and shortly after Mr. Tredwell, educated at Harvard college, was made professor of mathematics and natural philosophy, and an apparatus imported. The corner stone of the college building was laid by Hardy, Aug. 23, 1756, on the block now bounded by Murray, Church, and Barclay streets, and College place, and intersected by Park place. June 21, 1758, the first commencement was held, when 10 bachelors and as many masters of arts were graduated. The students began to lodge and mess in the college building in May, 1760, and on June 26 the procession moved from there to St. George's chapel to hold the third commencement. An English traveller of the period says: "The college, when finished, will be exceedingly handsome. It is to be built on 3 sides of a quadrangle facing Hudson's or North river, and will be the most beautifully situated, I believe, of any college in the world." At Dr. Johnson's request, the Rev. Myles Cooper, fellow of Queen's college, Oxford, was sent out in 1762 by the archbishop of Canterbury, and appointed fellow of the college, professor of moral philosophy, and to assist the president in instruction and government, with the understanding that he was to succeed him, which he did the following year. A writer on education in this country 40 years ago says Dr. Cooper was the most elegant scholar America ever saw. He took the English side in politics in the pamphlet controversies of the period, and had an anonymous antagonist who proved afterward to be his own pupil, Alexander Hamilton. The discovery did not interrupt their agreeable relations. Cooper became so obnoxious that he was obliged to fly for his life, on the night of May 10, 1775, the college having been attacked by a mob when he was in bed. In 1767 a grant of land was made to the college of 24,000 acres, which was subsequently lost in consequence of lying in that part of the colony afterward set off to constitute a portion of Vermont. The instruction appears to have been conducted by the president and 3 tutors or professors, who were always able men, till 1767, when a faculty of medicine consisting of 6 professors of great eminence was created. Among papers left by Dr. Cooper in this country is one giving a description of King's college, from which we learn that therein are taught, by proper masters and professors, natural law, physic, logic, ethics, metaphysics, mathematics, natural philosophy, astronomy, geography, history, chronology, rhetoric, Hebrew (a favorite study of President Johnson), Greek, Latin, modern languages, the belles lettres, and whatever else of literature may tend to accomplish the pupils as scholars and gentlemen. To the college is also annexed a grammar school for the due preparation of those who propose to complete their education in the arts and sciences. All students but those in medicine are obliged to lodge and diet in the college, unless they are particularly exempted by the governors and president; and the edifice is surrounded by a high fence, which also encloses a large court and garden, and a porter constantly attends at the front gate, which is closed at 10 o'clock each evening in summer and 9 in winter; after which hour the names of all that come in are delivered weekly to the president. Six days after the escape of Dr. Cooper, the Rev. Benjamin Moore, afterward bishop of the diocese, was made president *pro tem.* The following year, 1776, the college was ordered by the committee of safety to be prepared for the reception of troops. The students were dispersed, the library and apparatus deposited in the city hall, and in consequence lost, and the building became a military hospital. Six hundred volumes were recovered 30 years after in a room in St. Paul's chapel, their existence having been known only to the sexton. The library had received, among great numbers of valuable presents, a copy of every work from the university press of Oxford. This state of things continued for 8 years. "Until the foundation of King's college, 20 years before the declaration of independence," said an eminent jurist 30 years ago, "there were no seminaries within the colony in which any other than a very indifferent education could be procured. The influence of that institution on the literary character of the state was truly wonderful." He cites among its earliest graduates, Robert R. Livingston, Gouverneur Morris, and John Jay, each distinguished alike by his genius and erudition, and illustrious in the annals of his country. In 1784 regents of a state university were appointed, of which the governor, Clinton, was chancellor, who demanded and received what property belonged to King's college, the name of which was changed to Columbia college by the same act which gave them the power. The first student under the new organization was De Witt Clinton, who entered the junior class. The regents resolved to organize 4 faculties: a faculty of arts, with 7 professors; one of divinity, with such professors as might be established by the different religious societies within the state; a faculty of medicine, of 7 professors; and one of law, of 3. Beside all these, there were to be 9 extra professors, a president, secretary, and librarian. For several years there was no president, his duties being discharged by the professors in turn. There were in fact no funds to carry out the scheme of the regents. On Feb. 15, 1787, was reported by a committee of the legislature, of which John Jay and Alexander Hamilton were members, an act by which the original charter was confirmed to Columbia college, and it was placed under the care of 24 trustees. These held their first meeting May 8, 1787, and on the 21st elected William Samuel Johnson, LL.D., son of the first president, and one of the most eminent lawyers and statesmen of the day, as president. One of the first students of this period was John Randolph of Roanoke. In 1792 there was a full corps of professors, including one of oriental languages; one of natural history, chemistry, agriculture, and botany, occupied by Dr. Mitchill; and one of law, by James Kent. The president, Dr. Johnson, resigned in 1800, at the age of 74, and lived in retirement at Stratford to that of 92. He was succeeded by the Rev. Dr. Wharton of Philadelphia. From this period the president took no part in the instruction, but exercised only a general supervision; and under this arrangement, Bishop Moore accepted the presidency the last day of 1801. He did not reside in the college, nor on ordinary occasions take part in the discipline. In 1810, on the recommendation of a committee consisting of Mr. Rufus King and the Rev. Drs. Hobart, Mason, Abeel, and Miller, the requisites for admission to the college were raised much higher than they had ever been before. A few months after, a new course of studies was adopted, the basis of which has continued for 40 years since. In 1810 a new charter was obtained. In June, 1811, Bishop Moore having resigned the presidency, the Rev. William Harris was elected president, and the Rev. Dr. Mason provost, the statutes of the college having been altered for the latter purpose. In 1812 Dr. Mason was also elected a trustee, a previous act of the legislature allowing it having been obtained. He was one of the most learned of the clergy of his time, and distinguished for the life and interest which he gave to the exercises of the lecture room. Nov. 1, 1813, the medical school was incorporated with that of the college of physicians and surgeons. Dr. Mason resigned in 1816, and the office he held was discontinued. In 1817 the building was increased by the addition of two wings 50 feet square, each containing two dwelling houses for professors, and other improvements were made. A little before, the college received from the state the gift of the botanic garden ground, and a little after a grant of $10,000. In 1823 the Hon. James Kent delivered the course of lectures which were the basis of his celebrated commentaries. In 1830 the college opened a "scientific and literary course," accessible to others beside matriculated students, and professors were appointed in engineering, analytic chemistry, and other branches. The power to endow and nominate to new professorships was extended to religious bodies and individuals, and some 20 free scholarships were constituted to be in the gift of various religious and civil corporations in the city. In 18[illegible] the trustees appropriated $10,000 for the purchase of books and apparatus, chiefly for the benefit of the scientific course. This course was afterward

doned. In 1843 a professorship of German
founded by a bequest of $20,000 from Mr.
o Gebhard. In 1853 the first committee
ointed to take into consideration the ex-
y of removing the college, and whether in
vent of the removal, in consequence of the
onal means accruing from the disposal of
d site, now in the centre of commerce, any
what changes ought to be made in the un-
raduate course, and whether it would be
dient to establish a system of university edu-
n. The committee reported in favor of all
res, excluding from the scheme of a
instruction in medicine and theology,
sufficiently provided for in the city.
ay was taken from the members of the
ulty as to the results of their expe-
judgment on all points of interest
ven in any new improvements under con-
ation. In 1855 the committee announced
ready to report a statute. On Jan. 12,
committee was directed to bring in the
It was reported in March, the old site
in the mean time been sold, and the
was removed in May to the building for-
occupied by the institution for deaf mutes,
th street, which had been purchased, and
nterior renovated at great expense, for the
ose. The new statute preserved the college
se as heretofore, with some modifications, to
of the junior year. The university course
commence at the beginning of the senior
and continue for 3 years; at the end of the
be degree of A. B. to be conferred, and at
nd of the 3d that of A. M., on satisfactory
ination. The university course was divid-
nto 3 schools: a school of science, a school
tters, and a school of jurisprudence. Be-
the close of the college session terminating
ne, 1857, in addition to the existing faculty
5 new professors were appointed, and
red upon their duties on Oct. 1 following;
before the close of the session terminating
une, 1858, 4 additional professors, exclu-
y for the university course, were elected to
on their duties in connection with the ex-
g college faculty, making in all about 20
ssors to lecture in that course. It was de-
l that the lectures in the schools of law and
rs should be delivered in the building of the
York society library, while those of science
ld be in the college building, for convenience
cess to its cabinets and apparatus, and that all
ectures should commence on Nov. 1.

LUMBIA (or OREGON) RIVER rises in a
l lake on the W. slope of the Rocky moun-
about lat. 50° N. and long. 116° W., flows
. along the base of that range until it re-
s its northernmost tributary, after which it
a S. course to the 46th parallel, and thence
nearly due W. to the Pacific, forming the
dary between Washington and Oregon ter-
es. For about 140 m. it follows an ex-
ngly crooked course, and during its entire
h is very rapid, often passing through
tain gorges and broken by many cataracts. The tide sets up 140 m., to the foot of the cascades, which are a series of rapids caused by the passage of the stream through the Cascade range. At a distance of 30 or 40 m. from the ocean it expands into a kind of bay from 3 to 7 m. wide, which forms its mouth. At low tide there is about 20 feet of water over the flats at the entrance to this bay, while the depth of the channel is 24 feet. Vessels of 200 or 300 tons can ascend as far as the cascades; above this point the river is navigable by small vessels only, and by them for not more than 20 or 30 m. continuously. Its entire length, including the principal affluent, is estimated at 1,200 m. It was discovered in 1792 by Captain Robert Gray, who entered it May 11 of that year, in the Columbia Rediviva, of Boston, Mass. It was from this vessel that the river received its name. The first exploration of the Columbia was made in 1804–'5, by Captains Lewis and Clark, under the direction of the U. S. government. It is the largest river which enters the Pacific from the American continent. Principal tributaries, McGillivray's or Flat Bow, Clark's or Flat Head, and Lewis or Snake river.

COLUMBIANA, an E. co. of Ohio, separated from Pennsylvania by the Ohio river, and drained by a number of small streams; area, 490 sq. m.; pop. in 1850, 33,621. It has a diversified surface, the S. being hilly and the N. level or gently undulating. The soil is of limestone formation, and highly productive. Coal and iron are the most valuable minerals. The staples are grain, hay, cattle, wool, and dairy produce, and the productions in 1850 were 893,804 bushels of Indian corn, 311,507 of wheat, 383,386 of oats, 30,249 tons of hay, 322,965 lbs. of wool, and 655,389 of butter. There were 51 grist mills, 32 saw mills, 5 iron founderies, 6 woollen factories, 24 tanneries, 85 churches, 6 newspaper offices, and 12,296 pupils attending public schools. The Sandy and Beaver canal, the Pennsylvania and Ohio, and the Cleveland and Pittsburg railroads intersect the county. Capital, New Lisbon.

COLUMBIUM, a metal extracted from the mineral columbite, found in Connecticut. It was first discovered by Mr. Hatchett in 1801, and afterward by a Swedish chemist, who gave it the name of tantalum, having extracted the substance from tantalite. It was proved, however, by Dr. Wollaston, that this metal was identical with columbium, as is also the metal called by Rose niobium. It is of a yellowish white or gray color, and when burnished has a metallic lustre. The name columbium was probably given from its being originally discovered in North America.

COLUMBO, the root of a climbing plant, which grows in great profusion in the island of Mozambique, and is used by the inhabitants of that country in cases of dysentery. It is taken up, dried, and carried to India, whence it is exported to other parts of the world. It has a very bitter taste and slight odor, and is much used in medicine as a gentle tonic.

COLUMBRETES, a cluster of volcanic islands, of picturesque appearance, about 70 m. N. E. of the coast of Valencia. They belong to Spain, and during the middle ages, and even at a somewhat later period, acquired an unenviable notoriety as the retreat of the corsairs and pirates of Barbary who infested the Mediterranean. The largest of the group, Colibri, is supposed to be the ancient Ophiusa, so called from the Greek word for snake, with which reptiles the island was once thought to be overrun. Ophiusa formed one of the cluster anciently called Pityusæ.

COLUMBUS, a S. co. of N. C., bordering on S. C., bounded on the N. W. by Lumber river, and intersected by the Waccamaw; area estimated at 600 sq. m.; pop. in 1850, 5,909, of whom 1,503 were slaves. It has a level surface, partly occupied by marshes. The productions in 1850 were 187 bushels of wheat, 118,825 of sweet potatoes, 106,842 of Indian corn, 16,128 lbs. of butter, 3,145 of tobacco, and 26 bales of cotton. There were 14 grist mills, 1 saw mill, 2 tar and turpentine distilleries, 18 churches, and 462 pupils attending schools. Value of real estate in 1857, $686,260. Formed in 1808. Capital, Whitesville.

COLUMBUS, a city of Georgia, and capital of Muscogee co., on the left bank of the Chattahoochee river, 275 m. above Appalachicola bay; pop. in 1854, 8,860, of whom 3,317 were slaves. It enjoys superior advantages for trade and great facilities for the erection of mills and factories, and bids fair to become, in the course of a few years, one of the greatest manufacturing cities in the southern states. It already ranks third of the towns of Georgia in population, commerce, and importance. The Chattahoochee is navigable from Columbus to the gulf of Mexico during 8 months of the year; and from the end of October to the 1st of July, its waters are traversed by numerous steamboats, suitably constructed for the transportation of large quantities of cotton, as many as 80,000 bales of which are annually shipped from this city alone. Opposite here the river rushes over huge, rugged rocks, forming rapids, valuable for the excellent water power which they furnish, and in the improvement of which large sums of money have been expended. A dam 500 feet long has been constructed at this point. A handsome bridge connects the city with Girard village. Columbus is regularly laid out, with streets from 99 to 165 feet wide, and contains a court house, said to be one of the finest in the state, an orphan asylum, a gaol, a market house, 5 churches, viz.: 1 Presbyterian, 1 Episcopal, 1 Baptist, 1 Methodist, and 1 Roman Catholic; a college for females, a seminary, an academy, 3 weekly and 1 tri-weekly newspaper offices, 6 banks, 5 flour mills, 5 extensive cotton factories, in which are 20,000 spindles and 400 looms, and which employ 800 hands, a cotton-gin factory, cotton presses, a woollen factory, 2 founderies and machine shops, a manufactory of agricultural implements, and a paper mill. Three railroads meet here, viz.: the Muscogee (a continuation of the Southwestern railway), connecting it with Macon, the Montgomery and West Point, and the Mobile and Girard. Many handsome private dwellings, thickly shaded with trees, add to the beauty of its appearance. The city was laid out in 1828.

COLUMBUS, the capital of Lowndes co., Miss., a thriving post town on the left bank of the Tombigbee river, which is navigable at all seasons of the year; pop. in 1855, 3,800. It has frequent communication by steamboat with Mobile, possesses an active trade, and is the shipping place for large quantities of cotton. The surrounding district is very fertile, and occupied chiefly by plantations. Columbus contains a court house, gaol, bank, U. S. land office, female seminary, academy, theatre, 6 churches, and a newspaper office.

COLUMBUS, the capital city of Ohio, seat of justice of Franklin co., situated on the eastern bank of the Scioto, in the centre of the state, is one of the most flourishing towns, of the second magnitude, in the Ohio valley. It lies in lat. 39° 57′ N., long. 83° 8′ W., on the great alluvial plain which stretches from the E. part of Ohio to the Mississippi river. It has, therefore, no great natural features of mountain, lake, or sea, to make it remarkable. It is not, however, without some pleasing aspects. The growth and wealth of Columbus are largely due to the concentration of the state institutions, and the liberal expenditure of public money. These, added to the natural advantage of a rich country, and the enterprise of many of its inhabitants, will account for its rapid and vigorous progress. Columbus was established as the seat of government by an act of the legislature, in February, 1812. The original proprietors laid out the town in the following June, with rectangular streets, whose direction varies but little from the cardinal points. In 1816 it was incorporated as a borough, and in 1834, as a city. Its growth has been as follows: In 1810, none; in 1820, 1,400; in 1830, 2,437; in 1840, 6,487; in 1850, 17,882; in 1858, 25,000. The advantages of Columbus for internal commerce are very considerable. The following are the lines of inter-communication which centre here: Ohio canal (by branch), 340 miles; national road, 250; Cincinnati, Columbus, and Cleveland railroad, 254; Central Ohio railroad, 142; Columbus and Pittsburg railroad, 117; Columbus and Piqua railroad, 72; Columbus and Springfield, 20. These lines of locomotion keep up a direct communication, not only with every part of the state, but with all the large cities of the union. The national road, the turnpike down the Scioto, and other good roads, afford facilities for the transportation of country produce, and concentrate on Columbus the business of the surrounding country. The most interesting feature of Columbus to the stranger is its numerous and really great public buildings and institutions. In this it is not excelled by any place in our counce Washington city, and much sur- r town of the Ohio valley. The state concentrated in Columbus nearly all the buildings devoted to its business, benevo- r justice. The most conspicuous among e the capitol, the penitentiary, the lunatic the deaf and dumb asylum, and the lum. These are all on a large and scale, both within and without, worthy of nity and magnitude of the state. The is second in size only to the capitol of ted States. It is 304 feet long and 184 h, and covers 55,986 square feet. The be warmed is 1,787,300 cubic feet. The compares with that at Washington as :

	Washington.	Columbus.
'........................	90 feet.	64 feet.
....	120 "	157 "
om floor to eye of dome...	96 "	124 "

uilding is a really splendid structure. uilt in the ancient Doric order, of fine nestone, approaching marble in its tex- l appearance. This order being rigidly and chaste, it does not strike the eye with the magnificence of more elabo- buildings; but, when carefully exam- is, perhaps, as fine a specimen of archi- as our country contains. The interior ntly finished. The hall of the house of ntatives is 84 feet long by 72½ feet wide. ate chamber is 56 by 72½. The library large and spacious. There are rooms the state officers, beside 26 committee All the arrangements of this building for t. water, and grounds, are planned with improvement which modern skill has to invent. The penitentiary is another building. It is of hewn limestone, and, yards and shops, covers 6 acres of on the east bank of the Scioto. Its entire 156 feet, the centre being 56 feet, con- the warden's house and offices, with two each 200 feet front and 3 stories high. rings each contain 350 cells for prisoners, d in 5 tiers, and isolated from the main the building by open galleries. The natic asylum is another noble structure, about a mile east of the capitol, amid amented ground of 30 acres. The front of the building is 376 feet, the being 296 feet, and 46 in depth, with s, each 40 feet front by 218 in depth. ole makes a hollow square of nearly 2 The asylum contains 440 rooms, and is nearly full of patients, of whom the number recover. The Ohio deaf and lum is a plainer, but handsome build- ornamental grounds, and generally filled atients. The blind asylum, on the na- oad, is another of those great public insti- which adorn and dignify the state. The g medical college is a fine edifice, built in dern irregular style, but presenting a le appearance. Beside these, there are buildings in Columbus worthy of note, which are the depot of the railroads, the bridges over the Scioto, the Neill house, and several handsome churches. From the concentration of public institutions at Columbus, it is evident that a considerable number of the population are directly or indirectly connected with them. The following are the statistics of persons in their care or employment: penitentiary, 598 prisoners; officers, guards, &c., 57; lunatic, 261; officers and attendants, 48; deaf and dumb, 155; officers and attendants, 25; the blind, 74; officers and attendants, 10; aggregate, 1,228. Columbus is well supplied with religious and educational facilities. It has the following churches, viz.: 2 Baptist, 1 Congregational, 3 Methodist Episcopal, 2 Presbyterian, 2 Episcopal, 2 Roman Catholic, 1 Jewish, 1 German Lutheran, 1 Welsh, 1 United Brethren, and 1 Universalist. The educational institutions are the German Lutheran theological seminary, the Sterling medical college, several private academies, and the public schools. The press of Columbus consists of 3 daily newspapers, 10 weeklies, and 2 monthlies. Of these, 2 are published in German, 2 are engaged in politics, 2 are religious, 1 medical, 1 agricultural, 1 educational, 1 literary, 3 miscellaneous.

COLUMBUS, CHRISTOPHER, the discoverer of America, born in Genoa, Italy, about 1435, died at Valladolid, Spain, May 20, 1506. According to the custom of the time, he Latinized his name of CHRISTOFORO COLOMBO into Columbus, and when he went to Spain adopted the Spanish form of it, Colon. Ten different localities contend for the honor of his birth, but the question is set at rest by his will, dated Feb. 22, 1498, in which he says: *Siendo yo nacido en Genova* (I being born in Genoa). Recent researches have likewise settled the date of his nativity. Christopher was the eldest son of Domenico Colombo, a cloth weaver of Genoa, and Susanna Fontanarossa. They had 2 other sons, Bartolommeo and Giacomo, the latter called in Spain Diego; also a daughter, married to Giacomo Bavarello, a pork butcher. Columbus, in one of his letters, says that his ancestors, like himself, followed the sea. This may account for the good education given by the wool stapler to his sons in a time when many of the nobles could not write. The Genoese at this period were striving with the Venetians for the mastery of the sea. Maritime service was the readiest avenue to wealth and power, and thus Domenico encouraged his son's predilection for the sea, and even managed to send him at the age of 10 to the university of Pavia, where he studied "books of cosmography, history, philosophy, and other sciences" having a bearing on navigation. In his 14th year he returned to his father's workshop, where, in company with his brother Bartolommeo, he devoted the intervals of labor to the studies likely to aid him in his future career as a mariner. In 1449–'50, he shipped in the Genoese marine, in one of the vessels under command of his grand-uncle, Colombo, who held from the republic a roving commission against the Venetians and Neapolitans, the commercial rivals of Genoa, and against the pirates who infested the track of her commerce. Twenty years were passed afloat, but no continuous record can now be made of his career. A few incidents remain. It is probable his service, during most of the time, was in armed merchant ships, which did as much fighting as trading in the waters of Italy, the Levant, the Greek archipelago (he mentions having been ashore at Scio), and on the north and west coasts of Africa. His letters say that he was in the service of King René of Anjou. He probably served in the galleys which John, eldest son of René, fitted out at Genoa for the recovery of the Sicilian possessions of his father. On one occasion he was ordered to capture the Neapolitan galley Fernandina, stationed near Tunis. His sailors, learning that she was protected by a superior force, refused to proceed. Columbus quietly changed the poles of the compass, and crowding all sail, was soon beyond the cape of Carthagena, while his crew thought they were running for Marseilles. He was in the Genoese service for several years prior to 1470, when an accident changed his manner of life. In an action which took place off Cape Vincent, between a squadron under the nephew of Admiral Colombo and 4 Venetian galleys bringing rich freights from Flanders, the ship which Columbus was in took fire, and he saved himself by swimming 2 leagues, with the assistance of a spar, to the shore, whence he made the best of his way to Lisbon, where his brother Bartolommeo was settled as a designer of charts. Finding there several navigators whom Prince Henry had drawn around him, he determined to settle for a time. He was now 35 years of age, and his hair was gray. He remained in Portugal 14 years, till 1484, supporting himself by drawing charts, in conjunction with his brother, and making occasional voyages to Madeira, the Canaries, Azores, and the Portuguese settlements in Africa. The statement that he commanded a squadron for Louis XI. against the Spaniards seems to have arisen from confounding him with another Colombo in the French service. Soon after he had settled at Lisbon, he formed the acquaintance of a young lady, an inmate of the convent where he used to go to mass, and married her. She was Felipa Moñis de Palestrello, daughter of Bartolommeo di Palestrello, a distinguished Italian navigator in the service of Prince Henry, and colonizer and governor of Porto Santo, one of the Madeira islands. The lady was not rich, but of honorable position. Her father dying a short time after the marriage, Columbus went to reside with his mother-in-law, from whom he received the deceased navigator's papers and journals, a valuable legacy to one whose mind was already brooding over the idea of maritime discovery. About 1472 Columbus and his wife resided for a time on a small estate which the lady owned at Porto Santo. Here their son Diego was born. Here his brother-in-law informed him that he had seen a piece of curiously carved wood washed ashore in a westerly gale. An old pilot told him a similar story of having picked up a carved paddle 450 leagues west of Portugal. Canes of tropic growth had been washed on the Madeiras, huge pine trees on the Azores, and even 2 drowned men, of appearance unlike Europeans, had been found on the island of Flores—all from the west. About this time his views received unexpected corroboration. Alfonso V. of Portugal had invited the celebrated Italian cosmographer, Paolo del Pozzo, better known as Toscanelli, to express his views on a western passage to India. Whether this was done in consequence of proposals made by Columbus does not appear. The venerable philosopher, then in his 77th year, replied in a letter, dated Florence, June 25, 1474, furnishing a chart, in which the east coast of Asia was placed opposite to the west coast of Africa, with an ocean of indefinite extent lying between. Columbus immediately opened a correspondence with Toscanelli, who replied: "I praise your desire to navigate toward the west; the expedition you wish to undertake is not easy, but the route from the west coasts of Europe to the spice Indies is certain, if the tracks I have marked be followed." Unfortunately, only a small portion of the correspondence between these eminent men is extant. For some years longer Columbus seems to have cherished the idea, but no record of his proceedings in respect to it has come down to us. In 1477 he made a voyage, apparently of exploration, to the N. W., 100 leagues beyond Iceland, into lat. 73°, where he was astonished to find the sea not frozen. Next he is reported to have visited the Portuguese settlement of San Jorge da Mina, on the coast of Guinea. The remaining years unaccounted for were doubtless occupied in voyages, and in maturing his project.—We may here pause to glance at the state of geographical knowledge in his day. The little oriental traffic that percolated through Mohammedan channels enriched the countries of Europe which monopolized it. The Indies, with the fabled land of Cathay, the mines of Golconda, the golden kingdoms of Cipango and Mango, were themes on which imagination ran riot. The age was one of great intellectual restlessness. Maritime discovery offered the most tempting channel of enterprise, and it was making rapid strides. The compass and astrolabe had been recently adapted to navigation. Exploration was, however, pursued in a spirit of haphazard adventure rather than on the basis of scientific probabilities. Much absurd fiction mingled with ascertained fact. Thus a legend said that Mildum the giant, baptized by St. Brandon, informed that saint of an island of gold with walls of crystal, in the western sea, and offered to swim to it with a ship in tow; but a storm coming on, the giant went ashore and died, thus leaving the locality conjectural. A later romance of the 10th century reported that 7 bishops, flying from the Moors, reached an is-

and of the same sea and built thereon 7 cities, but having burned their ships, were unable to communicate with the world they had left. St. Brandon's isle is duly set down in the charts of Columbus's time, and an expedition, of which we never hear more, was to sail in March, 1487, under Fernando de Ulmo, a captain of Terceira, in search of it and the 7 cities. A supposition was general that islands existed in the Mare Tenebrosum (sea of darkness), that reached away to the edge of the world. Martin Behaim's globe, constructed at Nuremberg, places "several unknown islands hereabout." It is to be observed that Columbus never expected to discover a new continent, and never knew that he had done so. His expectation was, in sailing west, to reach the Indies. Nor did he originate the supposition that land lay to the westward. Aristotle, not to mention other ancient geographers, had conjectured that Asia might be reached by stretching beyond the pillars of Hercules. Edrisi, an Arabian scholar of the 12th century, surmised that the Atlantic communicated with the sea of Sin, which bathes the shores of Gog and Magog (China). Roger Bacon remarked that from the west of Europe to the Indies was a plane comprising more than ½ the earth's surface. Whether or not Columbus had met with these suggestions, he could not be ignorant of the text book of his time, the *Imago Mundi*, written by Cardinal Pedro de Alliaco in 1410, in which it is advanced that the sea extends between Spain and the Indies, *quæ principia Orientis et Occidentis sunt prope, cum mare parvum ea separet ex altera parte terræ*. A copy of this work is in the library of Seville, with marginal MS. notes, fondly but questionably believed to be in the handwriting of the great navigator. Briefly, the matured views of Columbus were, that the earth is spherical; that Asia extended to the parallel now indicated by 180° E. from Greenwich; that a navigable ocean only intervened, and that the said intervening sea between Europe and Asia was not more than ⅓ of the earth's circumference. No little confusion of scriptural localities was mixed up with his views, but not affecting the principles.—With the data just named, Columbus applied for aid in the first instance to the republic of Genoa, which refused, on the plea of want of funds, and subsequently either to Alfonso V. of Portugal or his successor, John II. It might not be necessary to follow his frequent disappointments, were it not that an excusable feeling of indignation has been permitted to cloud the veracity of history. King John, a prince who had given various proofs of his readiness to encourage any enterprise that tended to the aggrandizement of the Portuguese power, seems not to have been unfavorably disposed toward the project. The precise date when it was first submitted to the Portuguese government does not appear, but it was probably prior to Toscanelli's letter in 1474, in which case John must have received it as unfinished business left over from his predecessor's reign. At all events, John remitted the subject to his special committee of maritime affairs, on which was the cosmographer Roderigo, with, according to some authorities, Diego Ortez de Cazadilla, bishop of Ceuta, the king's confessor. The committee reported against it, as it was natural they should do, they having been active in urging the route around the coast of Africa. Not quite satisfied with this decision, the king remitted the matter to his privy council, who likewise reported against it. Orders were meantime given to a caravel carrying provisions to the Cape Verd islands to stretch to the westward, and see if there were any indications of land in that direction. After cruising for many days, the caravel returned without having seen any thing but sea and sky. The king was not yet inclined to abandon the project, but Columbus, being wearied and disgusted, gave him no further opportunity of entertaining it. These events, which occupy so brief a space in narration, extended over a period of at least 10 years, from 1474 to 1484. About this time his brother Bartolommeo set out for England to submit the project to Henry VII., but was captured by rovers on the way. Columbus was now thoroughly weary of Portugal. His wife was dead, his brother gone, he was poor, and the prospect of ever realizing his magnificent designs by Portuguese aid was feeble indeed. Accordingly, in 1484, he set out secretly from Lisbon, accompanied by his little son Diego, and took the road to Spain. From the circumstance that offers were afterward made to free him from civil and criminal process if he would return, it has been conjectured that he was overburdened with debt; but there seem more ready means of accounting for his escape than the supposition that he was fleeing from his creditors. We may infer that he sought to obtain employment as a mariner, from his having followed the sea-coast to Palos, instead of the direct route to Cordova, where the Spanish court then was. His taking this route was fortunate. One day in the autumn of 1484, as he stopped, weary and footsore, at the gate of the Franciscan monastery of La Rabida, near Palos de Moguer, in Andalusia, to beg some bread for his boy, the superior of the convent, Juan Perez de Marchena, to whom be all honor for the part he took in aiding the friendless navigator, struck with the stranger's noble appearance, entered into conversation with him, and invited him to rest. The mariners of Palos were then the most enterprising of Spain, and Juan Perez, himself a learned man, took much interest in their adventures. Dazzled by the stupendous projects described to him by Columbus, but distrusting his own judgment, the worthy prior sent for his friend, Garcia Fernandez, physician of the village, to consult. The result was favorable, and Columbus remained the guest of the prior till the spring of 1486. The Palos pilots were invited to express their views. One of them, named Pedro de Valasco, mentioned that he had once been carried far to the N. W. of Ireland by a current which he supposed to betoken land. During his residence with his friend the prior, Columbus visited Genoa, where, in 1485, his applications were a second time rejected. The dates are here uncertain, but he also applied for assistance to the Venetians, which was declined, on the ground of deficiency in the exchequer. Having transferred his aged father from Genoa to Savona, he returned to Palos, where he left his son in charge of the prior, and thence set out to the Spanish court, armed with a letter from the prior to Fernando de Talavera, the queen's confessor, a man of high character and great cloister learning, but opinionated, and jealous of any thing savoring of heterodoxy. He was afterward successor of Torquemada as head of the inquisition. The confessor treated him coldly, prevented his access to the king, and in all the conferences which subsequently took place on it, opposed the project as visionary, if not heretical. At length, through the friendship of Alonso de Quintanilla, comptroller of the Castilian treasury, Antonio Geraldini, the pope's nuncio, and his brother Alessandro Geraldini, tutor to the children of Ferdinand and Isabella, he was made known to Cardinal Mendoza, who introduced him to the king. Ferdinand heard him without disfavor, and referred the matter to a council of learned men, mostly ecclesiastics, under the presidency of the confessor. The committee met in the Dominican convent of San Estevan at Salamanca. The time ought to have been favorable to the application, for Spain, having by a treaty in 1479 renounced to Portugal the exclusive right of discovery and settlement on the coast of Africa in exchange for the Canary islands, was virtually cut off from all further colonization except in some hitherto unexplored direction. But unfortunately the conference, instead of investigating the project on scientific grounds, controverted it by scriptural texts; and it was not till 1491, after many renewed applications, that the commission reported "the project in question vain and impossible, and not becoming great princes to engage in on such slender grounds as had been adduced." Columbus, however, appears, during the 7 years he attended the court, to have experienced personally the favor of the king and queen, and to have had frequent communication with them, although the king at least could not be brought to believe in his wonderful projects. The Spanish sovereigns were during this period engaged in the war against the Moors of Granada, and Columbus seems to have borne arms as a volunteer. A passage in Diego Ortiz's "Annals of Seville" incidentally mentions his bravery. Records are also extant of his having been provided with free quarters at the king's charge, with pay equal to his personal expenses. During this period of hope deferred, Columbus sustained himself with undiminished confidence. Endued with a poetic temperament, the auguries he sought for in the mystic language of the Scriptures gave a bias to his mind, which in his later years amounted almost to delusion. He sought in prophecy for assurance that the time had come when Christianity should be extended to the ends of the earth, and came to regard himself as the destined instrument of Heaven for that end. While in this frame, and assisting at the siege of Baza, in Dec. 1489, 2 pilgrims having brought to the camp the threat of the sultan of Egypt to raze the tomb of Christ, Columbus registered a vow to devote the proceeds of his discoveries to rescue the holy sepulchre. In this year, too, he received a gleam of encouragement in a letter from John II. of Portugal, inviting him to return. Henry VII. of England, in the same year, sent a minister to the Spanish court, who may have had communication with Columbus, although nothing indicates that it was of an encouraging character. Two ties bound him at this period to Spain: the one was that the commissioners had not yet reported on his proposals; the other was a connection he had formed with Doña Beatriz Enriquez, by whom he had a son; which illicit connection he bitterly repented on his deathbed, although he loved the boy, Ferdinand, his future biographer. The report of the committee in 1491 was a death-blow to his hopes. After vainly attempting to interest the dukes of Medina Sidonia and Medina Celi, the latter of whom declined the enterprise, but became his friend, he set out to lay his project before Charles VIII. of France, from whom he had received a letter. He took the monastery of La Rabida in his way, to remove his son Diego, and once more stood before Juan Perez as poor and as far removed from the accomplishment of his object as he was 7 years before. The good prior was greatly moved. His ecclesiastical superiors had declared against the scheme. Once more summoning to his aid his friend the physician, as also Alonso Pinzon, an experienced navigator of Palos, they again went over the proofs, and came to the same conclusion. Pinzon was enthusiastic, and offered not only to advance money but to command a ship. Perez had been the queen's confessor, and presuming on this sacred relation, he wrote a letter to Isabella, which he sent by the hands of Sebastian Rodriguez, an influential navigator of Palos, beseeching her to grant him an interview. Receiving a favorable reply, the prior mounted his mule at midnight, and rode to the camp at Santa Fé, where the king and queen were, and procured for Columbus an opportunity to explain his views personally. The prior's efforts were seconded by the duke of Medina Celi, and by the queen's favorite, the lady Beatriz de Bobadilla. Isabella, on appointing an interview, considerately sent Columbus 20,000 maravedis (about $80), to put himself in condition to appear at court. Columbus related his story before the king and queen, with modesty, but with the confidence of one who had no room for doubt. His proposals would have been acceded to had he not demanded powers which her confessor, Fernando de Talavera, archbishop of Granada, characterized as "arrogant and pre-

ious," although they were not more so
iose that had been bestowed by Portugal
co da Gama. Columbus would not abate
; of his pretensions. Shaking the dust
is feet, he left the royal presence, and had
reached 2 leagues from Cordova, when
nger from the queen brought him back.
ief space of time that had intervened gave
the empire of the new world. When
ous left the queen's presence, Juan Perez,
de Quintanilla, Luis de San Angel, re-
of ecclesiastical revenues of Aragon, and
Beatriz, marchioness of Moya, remon-
. Ferdinand coldly signified that the ex-
was empty. Isabella exclaimed that she
uarre her own kingdom of Castile with
adding a phrase more hyperbolical
even if I pawn the crown jewels."
al cost was only 14,000 florins, the ne-
of raising money by such desperate means
viated by San Angel offering to advance
oney on behalf of the crown of Castile.
lingly, Columbus, on his return, had but
their majesties in signing the agreement,
own terms, as drawn up by Juan de
a, the royal secretary. This document,
at Santa Fé, April 17, 1492, contained 5
1, that Columbus and his heirs male
should have the office of admiral over
ls he might discover, with honors equal
e of the grand admiral of Castile in his
ion; 2, that he should be viceroy and
or-general, with right to name governors
sovereigns' approval; 3, that he should
$\frac{1}{10}$ of the net value of all pearls, precious
gold, silver, spices, and merchandise ob-
within his jurisdiction; 4, that he and his
ants should be the sole judges in all dis-
hat might arise between his jurisdiction
ain; and 5, that he might at any time ad-
$\frac{1}{8}$ in any venture, and receive a corre-
ng share of the profits. A letter of privi-
lso permitted Columbus to take the title
. On May 8, young Diego was appointed
Prince Juan, the heir apparent, and on
Columbus took leave of the king and
to superintend the fitting out of the ex-
n at Palos. He, with the aid of Perez
e brothers Pinzon, contributed $\frac{1}{8}$ of the
e. Trouble was found in procuring
Some were induced to join by 4 months'
advance, and by a decree that volunteers
be free from arrest for 2 months after
eturn. The complement was made up by
ment. In 3 months the expedition was
sail: 3 ships, Santa Maria, a decked ves-
d 2 caravels, or undecked boats, the Pinta
iña. The Santa Maria was of 90 feet keel;
4 masts, of which 2 were square-rigged,
fitted with lateen sails. It was decked
stem to stern, having beside a poop 26
length, beneath which was the arma-
of heavy guns, with small pieces forward,
rowing stones and grape. Eight an-
hung over the sides. The ship, in fact,
qual in size to a modern 20 gun brig. It
carried 66 seamen, of whom the muster roll mentions one Englishman and one Irishman. The Pinta and Niña were equal, respectively, to 16 and 10 gun sloops. They were provisioned for one year. Columbus commanded the Santa Maria; Martin Alonso Pinzon, having his 2d brother, Francisco Martin, for pilot, the Pinta; and the 3d brother, Vicente Yañez Pinzon, the Niña. Three other pilots were attached to the expedition, namely: Sancho Ruiz, Pedro Alonso Niño, and Bartolomé Roldan. Rodriguez Sanchez was inspector-general of the fleet; Diego de Arana, principal alguazil; Roderigo de Escobar, royal notary. There were also a surgeon, a physician, some few adventurers, and 90 seamen; in all, 120 souls. The small size of the two caravels was considered an advantage, for exploring rivers and coasts. Before leaving, Columbus, with most of his officers and crew, confessed to Juan Perez, and received the sacrament; and from the roads of Saltez, near Palos, on Friday morning, Aug. 3, 1492, they set sail on their expedition. They reached the Canaries without incident, except an accident to the Pinta's rudder, but hastened their departure from those islands, Sept. 6, on learning that a Portuguese fleet of 3 frigates was near, which the admiral was apprehensive might have been sent to intercept him. When night fell, and they lost sight of the last land on the margin of the sea of darkness, the full measure of their hardihood burst on the adventurers. Many wept, and declared they should never return. Columbus calmed their fears, and excited their cupidity by picturing the gorgeous regions of the east, drawing for descriptions on his imagination of Cathay. After leaving the Canaries, the winds were light and baffling, but always from the east. On Sept. 12, they saw floating a tree, or mast, as of a vessel of 200 tons. On the afternoon of the 13th, Columbus himself was startled to find that the needle was westing, and no longer pointed to the pole. This phenomenon of magnetic declination had been observed by the Italian philosbpher Peregrini in 1269, although Columbus does not seem to have been acquainted with it. However, he invented a plausible theory about the attraction of the polar star, which quieted the pilots' fears. He also took observations of the sun every day with an astrolabe, and kept 2 logs, one correct for himself, and the other, showing a smaller progress, for his crew, thus keeping them in ignorance of the great distance they were from Spain. As they advanced, the oldest sailors were deceived by frequent indications of land. On the night of the 15th, a meteor fell within 5 lengths of the admiral's ship. The 16th, the ships entered into the region of the trade winds. "This day, and all the following," says Columbus, "the air was so mild that it wanted but the song of nightingales to make it like the month of April in Andalusia." The same day they came into the sea of seaweed, yet known as the Sargasso sea, and, on the 18th, Martin Alonzo, who had been ahead in the Pinta,

which was the best sailer, assured the admiral that, from indications, they would see the land next day. The 19th was calm; they sounded, and found no bottom at 200 fathoms. On the 20th, a change of wind to the S. W. cheered the crews with the belief that they were not urged forward by an ever-blowing east wind against which it would be impossible to return. On the 23d was a storm, during which the crews insisted that the admiral should tempt Providence no further. On the 25th, the wind became favorable. Columbus was studying a chart in his cabin, when Martin Pinzon cried "Land!" pointing to the S. W., where a dark mass was visible, at the apparent distance of 25 leagues. *Gloria in excelsis Deo* was sung in all the ships, and the course was altered, only to find on the morrow that they had mistaken a cloud for the shore. For several days they sailed due west with a favoring breeze. On Oct. 1, Columbus estimated that he was 707 leagues from the Azores, and that in 40 more he would make some part of Asia. On the 7th the Niña gave the signal for land—again an illusion. The crews had long been in a state of mutiny, often despairing, at other times turbulent, and even plotting to throw the admiral overboard. Columbus never swerved. Impressed by the one great idea of Asia to the westward, he refused to turn from the course, not even in search of islands which the pilots imagined to be near. The 8th, 9th, and 10th, they sailed to the W. S. W., following the flight of birds. On the 11th, the Pinta picked up a piece of wood rudely carved, and the Niña a branch of thorn, with red berries. As night set in, the course was again changed due west. After evening prayer the admiral ordered a double watch to be set, and promised a silken doublet, in addition to the 10,000 maravedis guaranteed by the crown, to him who should first see the land. At 10 o'clock P. M. Columbus was seated on his deck, gazing wistfully seaward, when he saw a light. He called to Pedro Gutierrez, who also saw it, but Rodriguez Sanchez did not. No one slept that night. At 2 o'clock A. M. of Friday, October 12, 1492, after having been 71 days at sea, the Pinta fired a gun, the signal for land. Rodrigo Triana, a sailor of the Pinta, was the first who saw the new world. All the ships lay to. Morning showed them a wooded island about 2 leagues distant, and crowds of natives were seen running along the beach. At sunrise, the boats being lowered, Columbus with the royal standard of Castile, and the brothers Pinzon bearing each a flag with a green cross, were rowed with music and martial pomp to the shore. Columbus first stepped on the beach. All knelt down, kissing the ground with tears and thanks to God. Then rising and drawing his sword, Columbus, as grand admiral and viceroy, shook out the royal banner, took possession in the name of the crown of Castile, and named the island San Salvador (one of the Bahama group, called Guanahani by the natives). The astonished natives gazed in silence at their visitors, whom they imagined to be the gods come down from heaven. Presents were exchanged of toys and trinkets for cotton yarn and cassava bread. Some of the natives, who wore ornaments of gold, on being interrogated whence the metal came, indicated by gestures a country in the south, whereon Columbus carried off 7 of them and set out in search of this auriferous region, which he could not but think was Cipango. In the search, which proved fruitless as far as gold was concerned, he discovered the islands of Conception, Ferdinand and Isabella, Exuma, Isla Larga, and Cuba, the latter of which he at first thought was the Cipango he sought, but afterward concluded it was the mainland of India. He also discovered Hayti, which he thought was the Ophir of Solomon, but which he called Hispaniola, or Little Spain. On the bay, since called bay of Caracola, of this island, he built a fort with the timbers of the Santa Maria, and leaving in it 39 men, sailed, Jan. 4, 1493, for Spain, taking with him several natives in the Niña, Martin Pinzon having already gone gold-hunting on his own account in the Pinta. During the voyage a storm threatened the Niña with destruction. Columbus, fearful lest the knowledge of his discovery should perish, prepared a written statement of it, and heading it up in a cask committed it to the deep. His sailors, and probably he himself also, vowed that if they were spared they would attend mass in their shirts at the first Christian church they came to, a ceremony which they proceeded to perform on reaching the Azores. On March 15, 1493, the ship reached the port of Palos, having a few days before been driven by storm into the Tagus, where he was favorably entertained by King John. The Spanish sovereigns, then at Barcelona, received him with great relaxation of court etiquette, made him relate his adventures, seated in their presence, confirmed all the dignities previously bestowed, and placed him in command of a fleet of 17 ships and 1,500 men, to prosecute the discovery. With this fleet he sailed from Cadiz, Sept. 25, 1493. From this day his good fortune forsook him. Many of those who sailed with him were adventurers in search of gold by whatever means. Mutinies and quarrels broke out, and many of those who expected to find fortunes for the gathering, but met nothing but disappointment, threw the blame on the admiral. Having discovered the Windward islands, Jamaica, and Porto Rico, and founded a colony in Hispaniola, of which he left his brother Bartolommeo *adelantado*, or lieutenant-governor, he returned home against the trade winds, and reached Cadiz, June 11, 1496. He was successful in clearing himself of the clamor against him. On some courtiers depreciating the value of his discovery, he invited them to make an egg stand on end. When they had exhausted their efforts to accomplish the feat, Columbus struck the egg on the table, breaking the shell, and thus left it upright. "Any one can do that!" cried the courtiers. "When I have shown you the way," replied Columbus, leaving them to make the applica-

lumbus sailed on his 3d voyage to the
d, May 30, 1498, from San Lucar de
, with 6 ships. On this occasion he
er to the S., discovering the mouth of
oco. which he imagined was the great
having its rise in the garden of
coast of Para, and the islands of
garita, and Cubaqua; then he bore
niola, there to recruit his enfee-
. He found the colony more disor-
n ever, and in his efforts to restore it
the victim of malice and misrep-
A commissioner, named Francis-
a, was sent from Spain ostensibly
the difficulties. His first act was
nous and his brother in chains, and
to Spain. The account given of this
is touching. "Are you taking me to
llejo?" inquired Columbus sadly, when
to lead him from his cell.
o be conducted to Spain,"
officer, whereupon the admiral re-
silence. The officers of the ship of-
liberate him from his fetters, he re-
idly: "I will wear them as a memento
e of princes." The indignation
ughout Spain at this outrage
e king to disclaim having authorized
is evident that the nobles were jealous
perior rank of the admiral, and the
tisfied with the unproductiveness of
ountries. After 9 months' polite eva-
entreaties for redress, Ferdinand ap-
holas Ovando governor of Hispan-
room. Bobadilla had meantime
d, and was drowned on the way.
subsequent employment Columbus,
received, was the command of 4
with 150 men, to search for a pas-
ugh the sea, now the gulf of Mex-
ailed from Cadiz, May 9, 1502; was
ermission to refit at his own colony,
; coasted the south side of the gulf
after much suffering from famine
returned home, reaching San Lu-
, 1504, where he lay sick some
nd recovered only to have his claims
inally rejected by the king, Queen Isa-
now dead. Now 70 years old, broken
lthough in full possession of his mental
having in his own words "no place to
except an inn, and often with nothing
his sustenance," the discoverer of the
ld died, in the act of repeating the
Latin: "Lord, into thy hands I commit
." Seven years afterward a marble
placed, for very shame's sake, over
s, with an inscription ordered by the

A Castilla y a Leon
Nuevo mondo diò Colon.

stile and Leon a new world gave
Death did not end his voyages. His
first deposited in the convent of St.
were transferred in 1513 to the Car-
onastery of Las Cuevas· were taken in 1536 to St. Domingo, and deposited in the cathedral of that city; thence were conveyed with great pomp in 1796 to the cathedral of Havana, where they now repose.—The character of Columbus is impressed on his life: lofty, daring, and ambitious in design, indomitable in conduct, moderate in success, undepressed in adversity, and in all imbued with a spirit of devotion. In person he was above the middle height, his countenance oval, with aquiline nose, bluish-gray eyes, and fresh complexion. His hair had been auburn in youth, but whitened early. The nobleness of his bearing commanded respect. He spoke fluently, and his conversation was vivacious, although at a later period, when he had been tried by misfortune, he says his "speech was abrupt and little amiable." In personal habits he was temperate, and toward his family entertained the warmest affection. His sons were more fortunate than himself. Diego sued the king in the high council of the Indies, and, recovering the viceroyalty of Hispaniola, married Maria de Toledo, niece of the duke of Alva. Their eldest son, Luis, exchanged the hereditary dignity of admiral for a pension and the title of duke of Veragua, marquis of Jamaica. Luis's eldest daughter married her cousin Diego, and died without issue, the male line thus becoming extinct. Finally the property and titles became, in 1608, merged by marriage through the female line in a branch of the house of Braganza.—See Fernando Colon, *Historia del Almirante Christophoro Colombo, suo padre* (Italian translation from the Spanish MS.), Venice, 1571; *Navigatio Christophori Colombi*, Vicenza, 1507; *Codice diplomatico Colombo-Americana*, Genoa, 1523; Oviedo, *Historia generale de las Indias*, 1535–'37; Herrera, *Indias Occidentales*, 1601; Robertson's "History of America," 1777; Bossi, *Vita di Colombo*, Milan, 1818; Navarrete, *Relacion de los quatro Viajes de Cristobal Colon*, 1825; Washington Irving's "Life and Voyages of Columbus," New York, 1828; Prescott's "Ferdinand and Isabella," Boston, 1838; Roselly de Lorques, *Christophe Colombe, sa vie et ses voyages*, Paris, 1856; *Patria e biografia di Cristoforo Colombo*, Genoa, 1858.—Bartolommeo, brother of the preceding, born in Genoa about 1432, died in 1514. The events of his early years are not on record. In 1470 we find him established at Lisbon as a mariner and constructor of maps—one of those adventurous navigators whom the patronage of the Portuguese princes had drawn to their capital. About 1486 he visited the cape of Good Hope, probably with Barthelemi Diaz. It is not known how long he was absent when his brother sent him to England to seek the aid of Henry VII., but it appears certain that Christopher was ignorant of his fate, further than that he was captured by pirates. He did, however, attain the ear of the English monarch, and presented him with a map of the world, but it does not appear that he succeeded in securing English aid. On his return through France, he learned that

his brother had already discovered the new world, and had sailed on a second voyage. Hastening to the Spanish court, he was received as became the brother of the admiral. Queen Isabella sent him in command of 3 store ships to the new colony of Hispaniola, where Christopher received him with joy, and appointed him *adelantado* or lieutenant-governor of the Indies. In this position Bartolommeo showed great bravery and decision. He shared his brother's imprisonment, and with him was liberated on reaching Spain, where the Spanish monarchs confirmed his title, and gave him the lordship of the small island of Mona near St. Domingo, with 200 Indians as his personal body guard. The fierce energy of his character, however, made them jealous of giving him too much latitude in public affairs. He died without issue.

COLUMELLA, Lucius Junius Moderatus, a Roman writer on rural affairs, flourished about A. D. 42. He was a native of Gades (Cadiz), but resided chiefly at Rome. His treatise *De Re Rustica* is one of the most valuable works on agriculture which has come down to us from antiquity. It is divided into 12 books, of which the 10th is in verse. The earlier editions of this work contain also his treatise *De Arboribus*, in 1 book. According to Pliny, Columella wrote a work on ancient sacrifices for obtaining the fruits of the earth, but this is lost. The *editio princeps*, printed in folio by Jenson at Venice, in 1472, and forming part of a collection of *Rei Rusticæ Scriptores varii*, is very rare. The most complete edition is contained in the *Scriptores Rei Rusticæ* of Schneider, 4 vols. 8vo., Leips. 1794.

COLUMN (Lat. *columna*). A column consists of a shaft or body, a capital or head, and usually a base. The term is applied in strictness only when the shaft is composed of a single piece; when several pieces are employed, the result is a pillar. Columns are of very ancient application, having been used in the temple of Solomon and the palace of Ulysses; they are also universally found in the ancient structures of Egypt, India, and Persia, while in those of Babylon their place was supplied by piers. The Egyptian columns present a great variety of form and decoration; the base, when present, is extremly simple, consisting merely of a square slab or plinth. The shaft, as found in the earlier structures, was either square or polygonal, the faces in the latter case being often grooved; in later periods, it was generally circular, with the diameter varying at different heights, and frequently diminishing both toward the capital and the base. In the former class, the only decoration attempted was that of painting, while the latter were enriched by sculpture; in the grooved columns, a single face was usually left plain for the introduction of a column of hieroglyphics. The square shafts are sometimes ornamented with a figure, from which probably was derived the Grecian caryatides, a name given by the Athenians to statues of females supporting the roofs of their smaller temples, and intended as an indignity to the inhabitants of Caryæ, in Arcadia, who alone, of all the Peloponnesians, refused to join the confederacy against the Persians. When the figure of Osiris decorated the Egyptian shafts, it was simply as an ornament, as it would have been deemed a degradation to support any portion of the structure by the aid of his sacred person; with other figures, especially those of captives, no such scruples existed. The capitals were commonly imitations of the cup of a flower, the outer rim of which is either circular, or broken into a series of curving petals; the exterior surface is ornamented by representations of the bulrush with its stem and leaves, of the palm branch with its leaves and fruit, of the calyx of the lotus flower grouped with its accompanying leaves, of the rounded, tuft-like head of the palm before it is expanded in spring, of the lotus again with its flowers alternately in bud and blossom, or finally of the vine with its shoots and leaves intermingled with those of the palm tree. At Denderah there is a curious quadrangular capital, with an Isis's head on each side, surmounted by another quadrangular member, containing on each of its faces a temple doorway, with two winged globes above, and other appropriate decorations. A peculiar form of column, or rather pillar, was noticed by Mr. Hamilton in the temple of Gournon, and the portico of Ashmounein; instead of being formed of large masses, placed one above another, according to the usual practice, these were composed of irregular pieces so skilfully joined as to present the appearance of a single block; he describes their general aspect as that of a barrel, the bottom being like the lowest leaves of the lotus, above which were placed a number of concentric rings, binding the column like the hoops of a cask; still higher, the column was so worked by vertical cuttings as to seem like a barrel of rods held together by hoops; they were 40 feet in height, with a maximum circumference of 28½ feet at a height of 5 feet from the ground, and were painted yellow, red, and blue. Reeded columns, or those which appear like bundles of rods, bound together at intervals, are found in a number of localities; square columns were excavated at Thebes, and Pococke speaks of some of a triangular section. In the cave temples of India, which are excavated out of the solid rock, the columns are generally massive and stunted; the bases are often cylindrical, and sometimes equal in height to the shafts; the latter are circular or multangular, or sometimes both combined, and are surmounted by low, compressed capitals. At the cave of Ellora there are columns in the form of elephants bearing castles, and surmounted by a capital or abacus. The columns which are used in the Indian pagodas or temples are of different character, generally slender, and always profusely decorated with sculpture; the capitals are frequently extended like brackets, and thus produce a more effective support for the entabure. The few existing specimens of Persian olumns indicate simplicity and elegance in heir construction; some of these have a height f 70 feet, with a diameter of only $5\frac{3}{4}$ feet; a umber of the shafts are fluted with fillets intervening, and stand upon a sculptured base 4 or 5 eet in height; of capitals, there are two varieies, one of small scrolls like the Ionic volutes, rranged in successive rows on the sides at the op of the shaft; the others project like brackets rom two opposite sides of the shaft, and are haped into the fore part of an animal, bearing ome resemblance to a horse.—In Grecian arhitecture we find columns classed under 3 orlers, the Doric, Ionic, and Corinthian, the proortions of their component parts being exactly ed in each case. In the Doric order, the vanting, and the column varies in height to 6 diameters, of which the capital is r less than $\frac{1}{2}$ a diameter; the shaft dimin- upward in a slightly curved line, called , the upper diameter being from $\frac{2}{3}$ to ne lower, which latter is used as the unit proportion; the capital consists of a neck- an echinus or ovolo, and an abacus; the ng is about $\frac{1}{3}$ the height of the capital, and other members each $\frac{2}{3}$; when the necking tted, as is often the case, the ovolo occu- ne greater proportion of the height; the cus is a square tablet with sides rather greatr than the inferior diameter of the column; the is generally divided into 20 flutes, though is one example of 24 and several of 16; the re either segments of circles, semi-ellipses, entric curves. The Ionic column is rather re than 9 diameters in height, of which the e occupies $\frac{1}{3}$ of a diameter, and the capital er $\frac{3}{4}$ or $\frac{7}{8}$; the base is formed by a congeries mouldings, which extend gradually from $1\frac{1}{3}$ o $1\frac{1}{4}$ diameters; these are respectively a torus, ia, and a second torus, the 3 being sepa- by 2 equal fillets, and a third fillet crown- the whole; the upper diameter of the shaft little over $\frac{5}{6}$ of the lower, and is fluted ith 24 flutes, and alternating fillets; the flutes n plan are nearly semi-ellipses, and the thick- of the fillets nearly $\frac{1}{4}$ the width of the utes; the height of the capital is affected by he length of the necking, which is separated rom the head of the shaft, in some instances y a carved bead, and in others by a plain fillet; uldings, a bead, an ovolo, and a torus, priately carved, are placed above the neck- and surmounted by a parallelogramic block, ng on its face the volutes; these latter are a diameter in depth, nearly $\frac{1}{2}$ a diameter rt, and extend in front to $1\frac{1}{2}$ diameters. The inthian column is 10 diameters in height, of which the base is rather more than $\frac{1}{3}$ of a diamter, and the capital a little over $1\frac{1}{8}$ diameters; he base is composed successively of a torus and illet, which occupy $\frac{2}{5}$ of its height, a scotia and illet forming not quite $\frac{2}{5}$ more, and a second orus, or reversed ovolo, of $\frac{1}{5}$, surmounted by a illet; the upper diameter of the shaft is $\frac{5}{6}$ of its ower, and the shaft contains 24 flutes and fillets, the former being semi-ellipses, so deep as nearly to approach semicircles, and the fillets occupying rather more than $\frac{1}{4}$ the width of the flutes; the core of the capital is a cylinder, rather less in bulk than the upper diameter of the shaft, and banded by two rows, one of water leaves $\frac{1}{6}$ of the whole height, and the other of leaves of the acanthus, attached to the capital by flowered buttons, and occupying $\frac{1}{3}$ of the whole height; a little more than another $\frac{1}{3}$ is filled by helices and tendrils, the latter supporting honeysuckles against the middle of the abacus, which surmounts the whole, and occupies $\frac{1}{7}$ of the height. The above columns were all used by the Romans, excepting the Corinthian, with modifications that detracted much from their original purity and elegance; in addition, the Romans employed columns of the Tuscan and of the composite order. The former presents great simplicity and massiveness of character; according to Vitruvius, the shaft is equal in height to 6 diameters, the base and capital each to $\frac{1}{2}$ a diameter; the base consists of a circular plinth $\frac{1}{4}$ of a diameter in height, surmounted by a torus $\frac{1}{3}$ of the height of the plinth, and a fillet about $\frac{1}{4}$ the height of the torus; the upper diameter of the shaft is equal to $\frac{3}{4}$ of the lower diameter; the capital was divided into 3 equal parts, one of which was filled by a rectangular abacus, another by an ovolo, and the third by an apophygis and hypotrachelium, the breadth of the abacus being $\frac{1}{4}$ of a diameter. As we have no ancient example of this style of column, the above proportions must be considered as belonging to the modern Italian school. The columns of the composite order differ from those of the Corinthian only in their capitals. In the composite capitals we have volutes enlarged to nearly $\frac{1}{4}$ the whole height of the capital, with their stems horizontally connected under the abacus; the drum of the capital is girded under the stem of the volutes by an ovolo and bead, as in the Ionic order, while the central tendrils of the Corinthian are omitted; the whole height from the hypotrachelium to the bottom of the volutes is filled by 2 rows of acanthus leaves. In the styles immediately succeeding the Roman, we find the columns usually copies, more or less perfect, of the above-mentioned forms. Many of the more characteristic capitals of the Byzantine style were merely inverted truncated pyramids, bearing on their surface a species of basket work in low relief. In the Lombardic columns, the base is either a square block rounded off at the top, or else consists of a carved lion, or other monster, whose back supports the shafts; the shafts are generally circular, and of the same diameter throughout, while the capitals are usually debased copies of the Corinthian style, the ornaments being sometimes spear heads and scroll or fret work, and at other times grotesque designs of animals, either real or monstrous. The columns of the Gothic style are of infinite variety, both in form, proportion, and decoration, their details being subject only to the laws of beauty and utility. Among the rules of Vitruvius on this subject, we find that in the arrangement of columns in structures, those at the angles should be thicker than the intermediate ones; that the greater their height the less should be their diminution; and that the two middle columns opposite the entry should have a wider interval than any two of the others. Columns receive a great variety of names, depending, 1st, upon their materials; 2d, their construction; 3d, formation; 4th, decoration; 5th, disposition; and 6th, destination. Under the first head, we have moulded, fusible, transparent, scagliola, masonic, and wooden columns; 2d, columns in bands or tambours, in trencheons, and banded columns; 3d, attic, conical, conoidal, cylindrical, cylindroidal, and polygonal; 4th, bark-formed, cabled, caryatic, fluted, and twisted; 5th, angular, cantoned, coupled, doubled, engaged, flanked, grouped, inserted, insulated, median, and niched; 6th, agricultural, astronomical, boundary, chronological, funeral, gnomonic, historical, indicative, itinerary, lactary, legal, manubiary, menian, miliary, military, phosphorical, rostral, statuary, symbolical, and zoophoric.—Among the most celebrated triumphal columns of antiquity is the so-called Pompey's pillar near Alexandria in Egypt; it is of the Corinthian order, and constructed of red granite; the shaft is 73 feet in height, and the entire column 98 feet 9 inches; it was formerly supposed to have been erected either by Pompey, or as a mark of honor to him, though some attributed it to Vespasian, and others still to Alexander Severus, but it has since been shown conclusively, from its Greek inscription, that it was erected by Publius, the prefect of Egypt, in honor of Diocletian; according to Denon, it acquired the name of Pompey's pillar in the 15th century. Trajan's column is of the Doric order, and 132 feet in height; it was erected in the centre of the *forum Trajani*, and dedicated to the emperor Trajan, as a commemoration of his victory over the Dacians; the shaft is constructed of 34 pieces of Greek marble, joined with scraps of bronze, and for beauty of style, elegance of proportion, and simplicity and dexterity of sculpture, is considered a masterpiece of art; 2,500 figures are sculptured on the entire work, the emperor being represented over 50 times; the figures at the bottom of the shaft are 2 feet in height, gradually increasing to a height of 4 feet at the top. It was executed, as is supposed, by Apollodorus, A. D. 115. Trajan died at Seleucia, and his ashes were brought home and deposited in a golden ball at the summit of the column. A similar column was erected to Antoninus Pius, by Marcus Aurelius; its height is 122 feet; it is decorated in a similar manner to Trajan's, but the execution is inferior. Two triumphal columns were erected at Constantinople, similar to those of Trajan and Antoninus: one, to the emperor Constantine, was constructed of 7 large cylindrical blocks of porphyry, the whole surmounted by a statue of the emperor; this is entirely destroyed, while of the other, erected by Theodosius II. to Arcadius, nothing remains but the pedestal and the first course of the shaft; it was destroyed by the Turks, who were fearful of its falling, it having been several times damaged by earthquakes. The London monument is a Doric column, 202 feet in height, and with a fluted shaft: the diameter at the base of the shaft is 15 feet: it is of Portland stone, with a staircase in the middle of black marble, containing 385 steps: it was designed by Sir Christopher Wren, and erected in memory of the burning of London, A. D. 1666, in the place where the conflagration commenced: the column was commenced in 1671 and finished in 1677. The Napoleon column, on the Place Vendôme, Paris, was erected to commemorate the campaign of 1805; it is of the Doric order, 135 feet in height, with a shaft 12 feet in diameter: it is built of stone covered with bass-reliefs in bronze, representing the French victories: the bronze was composed of 1,200 pieces of cannon, taken from the Russian and Austrian armies.

COLUMN, in military tactics, a body of troops arranged with narrow front and in deep files. It is termed close column, column at quarter distance, or open column, according to the breadth of the intervals.

COLUMNAR STRUCTURE, a form assumed by a variety of rocks of lava-like origin, the result of slow cooling. The columns extend at right angles to the cooling surface. Basalt, greenstone, porphyry, and sometimes granite, are met with in these forms. The columns of basalt of the Giant's Causeway in Ireland are commonly 5-sided, and rest one upon another in a close joint. The number of sides is also 3, 4, 6, or 8. The palisades of the Hudson afford an example of this structure in rather rude forms, while the Columbia river presents it in vertical walls, rising from 400 to 1,000 feet high, one series of columns resting upon another, separated sometimes by interposed layers of conglomerate, amygdaloid, and breccia. An interesting example of this structure is met with in the beds of fire clay and coal in the coal field of south-eastern Virginia, both the fire clay and coal being converted into columnar forms by the action of a bed of trap rock. (See Coke, Natural.) The structure has been artificially produced by Mr. Gregory Watt of England, who melted 700 lbs. of basalt in a furnace for melting iron, and left it to cool slowly. As the mass became solid it separated in globular forms, which, as they enlarged, pressed against each other, till they were thus pressed into polygonal prisms.

COLURES, two great circles of the celestial sphere, one passing through the equinoctial and the other through the solstitial points of the ecliptic, intersecting each other at right angles at the poles.

COLUSA, a N. W. co. of California, bounded E. by the Sacramento river, and W. by the coast range; area, about 3,500 sq. m.; pop. in 1856, about 4,000. It is exclusively a farming and grazing district, and comprises some of the best land in the state. The productions in

re estimated at 122,360 bushels of
14,602 of barley, and 1,175 tons of
alue of real estate in 1856, $489,917.
Colusa. Organized in 1850.

A, a condition resembling profound
n which the activity of the sensory
is re or less completely suspended.
um, or the assemblage of sensory
its of the ganglionic masses lying
he of the skull in man, and partly
d in the dulla oblongata, described in
, as the tubercula quadrige-
ry lobes, corpora striata, and optic
which the nerves of special sense
common sensation have their central
tions. The nerves of smell may be
to the olfactory bulbs or ganglia; the
of vision to the tubercula quadrigemina,
resentatives of the optic lobes of the
nimals; the nerves of hearing to a small
n in the medulla oblongata on each side
4th ventricle; the nerves of common
to the optic thalami; and the nerves
to the corpora striata. This as-
of ganglia forms a nervous centre, the
distinct from the cerebrum and
as these are from each other, the
"sensory ganglia." The cerebrum,
is necessary for the reception of im-
received from these ganglia, and for
n of the motor influence down-
them, before the individual be-
conscious of any process of thought, or
ebral changes give any result of a psy-
haracter. In complete coma the activity
e ganglia is suspended, so that the indi-
is neither conscious of impressions de-
m the organs of sense, nor has any per-
of self-existence from the recognition of
l changes; shut off from the external
and from internal sensation, his existence
intents and purposes a nonentity, a
psychical annihilation. In the simpler
of c a there is only a suspension, not a
the cerebral functions; but in the
the accompanying delirium shows
of the hemispheres. Coma may be
ed by congestion or hæmorrhage in the
y any abnormal pressure on this organ,
agency of narcotic poisons and alcohol,
austion from loss of blood, by con-
of the brain, and by action on the
of various morbid products generated
the system. Slight coma differs but lit-
profound sleep; the heavy sleep of the
or that after severe and long mental
exertion, is almost comatose, the per-
quite insensible to ordinary external
; is condition cannot be regarded as
but as the rest required for the regen-
of the body by the slow and unobstructed
nce of the nutritive processes; so in
from concussion or deficient supply of
o the brain, the person cannot be arous-
n his deep sleep without danger of vio-
d perhaps fatal reaction. Medical writers describe 2 varieties or stages of coma: *coma vigil*, in which the patient opens his eyes when spoken to, instantly shutting them again, with delirium, muttering, and agitation, as in unnatural wakefulness; and *coma somnolentum*, in which, after momentary revival, the patient sinks immediately into an apparently profound sleep. In the mesmeric state complete coma or insensibility is sometimes produced, distinguishable from the coma of cerebral oppression, like hysteric coma, by the constant twitching movements of the eyelids; during this state severe surgical operations have been performed without any consciousness on the part of the patient; it of course is effected through the sensory ganglia and cerebrum, but it is sometimes extended to the medulla oblongata, interfering with the movements of respiration.

COMAL, a central co. of Texas, bounded S. by the Cibolo river, and intersected by the Guadalupe; area, 1,024 sq. m.; pop. in 1856, 3,012, of whom 168 were slaves. The surface is rolling, and in some parts mountainous; live oak and mezquit covers about ¼ of the land. The soil is fertile in the valleys, but fit only for grazing elsewhere. The productions in 1850 were 37,575 bushels of Indian corn, 1,615 of sweet potatoes, 10 bales of cotton, and 9,444 lbs. of butter. There were 2 churches, and 130 pupils attending public schools. Value of real estate in 1857, $621,720. Capital, New Braunfels.

COMANA. I. An ancient city of Cappadocia (supposed to be the modern Elbostan), on the river Sarus, celebrated in antiquity for its temple of Artemis Tauropolis, and for the great devotion of its inhabitants to the worship of that goddess. Over 6,000 persons were engaged in the service of the temple. The city was governed by the high priest, who was always a member of the reigning family, and took rank next to the king. II. A city of Pontus, now Tokat, on the river Iris, and almost as famous for its devotion to Artemis as the other city of the same name.

COMANCHE, a central co. of Texas, separated from Bosque and Coryell counties in 1856; area, 1,464 sq. m.; pop. in 1856, 264, of whom 34 were slaves. A mountain ridge forms its S. W. boundary; the rest of the surface is generally undulating and well timbered, about a third part being covered with a valuable growth of oak, ash, elm, &c. The soil is fertile in the river bottoms, but unproductive in other places. The principal streams are Leon river and its tributaries. Capital, Camden.

COMANCHES, a large and warlike nation of Indians, inhabiting Texas and the adjoining parts of Mexico. They are a nomadic people, without any fixed habitations or villages, and roam from the shores of the gulf of Mexico to New Mexico. In their forays they are found near the settlements on the San Antonio, Colorado, and Brazos rivers, and their tributaries. During the summer months they reach the eastern parts of New Mexico, even as far north as Santa Fe, and at all times they carry on their predatory incursions on the Mexicans. In this, they do not confine themselves to the border settlements, but traversing the states of Chihuahua, Coahuila, and Nuevo Leon, penetrate the country hundreds of miles to Durango, where their ravages have lately been extensive. Their range is thus from 800 to 900 m. from north to south, and from east to west about 700 m. Their numbers were estimated by President Burnet in 1847 at from 10,000 to 12,000 souls, with from 2,000 to 2,500 warriors, which is about a fair estimate of their number at the present time (1858), although by some writers it is placed higher. They possess large herds of horses and mules; in some instances a chief will own from 200 to 300. Horned cattle they only obtain for their immediate wants, as they cannot drive them as fast as it is necessary for them to move. Their horses, mules, and cattle are obtained wholly by robbing the Mexicans and Americans; indeed, their wars are rather for spoils of this kind than for other objects. Prisoners, except women and children, they never take. The men are always scalped on the spot, although formerly they had to submit to a torture of several days by the women, after which they became their slaves. The young women they make wives of, and children are trained with as much care as their own. Mexican children readily adopt the customs of the savages, and when grown up, often exercise much influence among them. The Comanches do not appear ever to have had fixed residences; no tumuli, mounds, or remains of ancient edifices are to be found in their country. The general adoption of the horse has tended greatly to improve them physically, to give them a much wider range, and to render them more formidable as enemies. Children are early taught the use of the lance and the bow and arrow, and hence become very expert. Firearms, having been introduced by the Texan traders contrary to law, are now used by the chiefs and all others who can obtain them. These they often employ to much advantage, but their chief reliance is upon the bow and arrow. They always fight upon horseback, and in attacking a train of wagons, endeavor by their screams and war whoops to alarm and stampede the animals. If they succeed in this, the destruction of the train is almost certain. Parties of emigrants, and even trains of government wagons, sometimes have severe contests with them. When they attack villages, they murder all whom they meet, and then quietly drive off the stock. The chiefs of this nation do not inherit their authority, but obtain it by their superior knowledge, success in war, or by acts of personal bravery. Even then, it is more advisory than compulsive. They also have many minor chiefs or captains, who lead their small bands, and who are chosen for their courage. "Any one," says Mr. Burnet, one of the pioneers of Texas, "who finds and avails himself of the opportunity for robbing horses or taking scalps, may aspire to the honors of chieftaincy." If any social difficulty occurs, it is usually adjusted by a council of the chiefs present, aided by the seniors of the lodges, whose decision is usually, although not always, conclusive between the parties at variance. These difficulties, however, are few, and family feuds seldom arise. They live together in a degree of social harmony which strikingly contrasts with the domestic incidents of some pseudo-civilized communities that boast of their enlightenment. They have no idea of jurisprudence, and no organized and authoritative system of national policy. Hence, treaties made by them are regarded only as long as they suppose them to be for their good. Should a favorable opportunity present itself for plunder, they do not hesitate to avail themselves of it, and disavow their treaty. The religious notions of the Comanches are exceedingly crude. They have some indefinite traditional idea of a great spirit, but no distinct mode or semblance of worship. They do not believe in an evil spirit, as most Indian tribes do, which it is necessary to appease. Every thing, both evil and good, they attribute to the good spirit. They have an indistinct idea of a future life, and that the adepts at stealing horses or taking scalps, and others similarly good, will, at death, be translated to elysian hunting grounds, where buffalo and other game abound. Fire is one of their sacred symbols, and is used in their religious observances. When a warrior dies, his favorite horses and implements of the chase are buried with him. They mourn for the dead systematically and periodically with great noise; at which times the female relatives of the deceased scarify their arms and legs with sharp flints. The duration of these lamentations depends on the estimation and quality of the deceased, varying from 3 to 5 or 7 days; after which he seems to be totally forgotten. Their ties of consanguinity are very strong, and extend not only to blood relations, but to relations by marriage. Offences committed against any member of a family are avenged by all or any one connected with it. The marriage obligation they do not consider perpetual; it exists only during the pleasure of the parties. A man may leave his wife and take another whenever he pleases. Parents have full control over their daughters in marriage, and require from the suitor certain stipulated presents. Polygamy is practised to a great extent, some chiefs having as many as 10 wives. Inconstancy on the part of the wife is punished the same as among the Apaches, by cutting off the nose, while the seducer is deprived of his available property, which is given to the injured party. The husband exercises authority over his wife, who does all the labor, while he does the fighting and robbing. No marriage ceremony is performed, and girls often enter the marriage state before the age of puberty. The Comanches never cultivate the soil, depending for food upon the chase, but chiefly upon mules and horses. During the summer months they reach the buffalo region, and then depend upon the flesh of these animals for food; but as the buffalo at the same time moves northward, the Indians suffer greatly for food when they arrive too late at the hunting ground. In the winter they generally congregate in the Bolson de Mapimi, in Mexico, where the climate is mild, where they can herd their stock without fear of any enemy, and where they can send their pillaging expeditions into the very heart of the adjoining Mexican states. Their customary dress is the breech cloth and moccasins or leggins, with a dressed buffalo skin loosely thrown over their shoulders. A broad sash highly ornamented with beads is a favorite article of dress with them. They also wear a great variety of ornaments on the head, neck, breast, and arms. Many of these made of silver are obtained from the Mexicans. Native dyes, produced from earths and plants, and vermilion, indigo, and yellow ochre, procured from traders, are much used by them to paint their faces and bodies. Their head-dress is highly ornamented with beads and red cloth. Sometimes they add a profusion of feathers, and not unfrequently horse hair and cow tails. Their arm bands are made of large brass wire; their nose pieces of shell, bone, or silver, attached to the division cartilage; and their ear pendants of silver or gold rings, strings of beads, or any other ornament which can be converted to that use. The manes and tails of their horses are also ornamented with strips of red cloth. When going to war or into a fight, they divest themselves of every thing except their breech cloth and leggins. Beside the spear, bow and arrows, a well-equipped warrior carries a shield made of raw buffalo hide, contracted and hardened so as to resist an arrow, and, unless fired near, even a musket ball. When a chief is killed in battle, it is a cause of much greater lamentation than when he dies a natural death. The Comanches call themselves *Naiini*, which means first alive or live people. Among the adjacent tribes they bear other names; but the Mexicans and the Apaches only know them as Comanches.

COMAYAGUA (formerly Valladolid), the capital of the republic of Honduras, and of the department of its own name (pop. of the latter, 75,000), situated on the southern border of the plain of Comayagua, in lat. 14° 28′ N., long. 87° 39′ W., on the left bank of the Ullua river, 192 m. E. of Guatemala; pop. about 8,000. Founded by Alonzo Caceres in 1540, the city enjoyed a great degree of prosperity, contained many fine edifices, and a population of about 18,000, until 1827, when it was burnt by the monarchical faction of Guatemala, and has never since wholly recovered. It is the seat of a bishopric, has a large and beautiful cathedral, a richly endowed hospital, several convents, and a college.

COMB (Sax. *camb*), an instrument of wood, horn, shell, ivory, or other material, cut on one or both sides into a series of teeth, serving to disentangle and adjust the hair, and often worn by women as an ornament to the head, or to retain the hair in place. Its invention belongs to the remotest antiquity. The combs of the ancient Egyptians, as shown by recently discovered monuments, were usually of wood, having on one side large, and on the other fine teeth, the central portion being sometimes inlaid, or ornamented with carved work. When having but a single row of teeth, the opposite side was often surmounted by a figure of the ibex or some other animal. They were about 4 inches long and 6 deep, the teeth on either side being over 2 inches in length. The Greeks, who dressed their hair with great care, used combs made of boxwood obtained from the shores of the Euxine. Golden combs were ascribed by the poets to the goddesses. Three combs, similar to modern small-tooth combs, are represented on the Amyclæan marbles. Roman combs, like the Greek, were made of boxwood, especially that obtained from the mountains of Cytorus, in Asia Minor, and remains of them have been found at Pompeii. Wood long continued the common material for combs, but during the later middle ages horn, ivory, and gold were sometimes employed, and pearls and precious and artificial stones were added for ornaments; and the comb was thus made an elegant part of the coiffure. Some modern sculptors, as Canova, have introduced it with fine effect as a part of feminine costume in statuary.—The pieces of shell, as found in commerce, are never of suitable forms for the comb. They are therefore softened with boiling water and put between iron or brass moulds until they cool. In this way the desired shape may be given. The place for the teeth is next marked. The interstices of the teeth were formerly cut with a thin steel saw, but a machine has been more recently invented by Mr. Lyne, in which, by means of pressure, 2 combs are cut at the same time from the same strip of shell or ivory. The sides of the strip are to be the backs of the two combs, the teeth lying in the middle portion. The strip is fastened to a carriage, which is moved forward until it comes under the action of a ratchet wheel toothed upon a part of its circumference. The teeth of this wheel bring down a lever furnished with a chisel, which cuts out the 2 combs from the flat piece, the teeth of one lying between those of the other. This process is called parting, and is performed very rapidly and with great precision. So delicate are some of the saw machines, that from 80 to 100 teeth may be cut in an inch of ivory. Within a few years, excellent combs have been manufactured in this country from vulcanized India-rubber.

COMBACONUM, an ancient city of Hindostan, situated in the Carnatic, 20 m. E. of Tanjore; pop. 40,000. It is esteemed a holy city, and has several pagodas, gateways, and water tanks of very superior construction. One of these tanks is said to be filled every 12th year by the waters of the Ganges, which enter the reservoir by a subterranean channel. This water is held capable of purifying from sin and uncleanness every one who bathes in it, and thousands journey thither at the proper season to participate in its benefits.

COMBE, George, a Scottish phrenologist, born Oct. 21, 1788, in Livingston Yards, a suburb of Edinburgh, died Aug. 14, 1858, at Moor Park, Surrey, England. He was the 5th child and the 3d son of a family of 17 children. His father, a master brewer, was a person of remarkable force of character; his mother possessed an excellent bodily constitution, united with practical good sense. Both parents were rigid Presbyterians, and very strict in enforcing religious observances on their children. But they were ignorant and thoughtless of the laws and conditions of health, and brought up their children in a neighborhood abounding in malarious influences, crowded them into ill-ventilated sleeping apartments, disregarded their clothing and diet, and the usual consequences followed—premature death to some, and impaired constitutions to the rest. The recollections of their unfortunate youthful experience deeply impressed the minds of the brothers George and Andrew with the importance of a knowledge of the laws and conditions of health; and the sufferings they both experienced no doubt added greatly to the force and clearness of their convictions, and the earnestness with which they sought to impress those truths on the minds of others. George Combe was bred to the legal profession. He served 5 years' apprenticeship in the office of Higgins and Dallas, of Edinburgh, and in 1812 he was admitted as a writer to the signet, and went to live in Bank street, Edinburgh, where his sister Jane kept house for him until she died, and afterward his niece, Miss Marion Cox, until his marriage in 1833 with Miss Siddons, the daughter of the celebrated Mrs. Siddons. They had no children. As a lawyer, Mr. Combe was distinguished by sound judgment and strict integrity, but his business was principally of a peaceful character, such as the care of estates and the settlement of controversies by arbitration. When the doctrines of phrenology were first promulgated in Edinburgh, they were ably opposed and violently denounced by the teachers and expounders of the accepted mental philosophy. Spurzheim went there in 1816, and with brain in hand demonstrated the truth of all that Gall and he had stated in relation to its structural arrangement and convolutions. George Combe, convinced that the new science would lead to the better development of the whole human being, that it must produce a revolution in all the existing mental philosophies, and must exert a remodelling influence on the penal, disciplinary, and educational institutions of the world, devoted himself to its propagation; and his principal work, the "Constitution of Man, considered in relation to External Objects," published in 1828, produced a wide and deep impression. In 1823, assisted by a few friends, George and Andrew Combe established the "Edinburgh Phrenological Journal," and for more than 23 years gratuitously contributed to its pages. In 1837 Mr. Combe visited Germany; and in 1838, accompanied by his wife, he visited the United States, and returned home in June, 1840. While in America he delivered 158 lectures in various parts of the country. In 1842 he revisited Germany, and in the summer of that year delivered in Heidelberg a series of lectures on phrenology, in the German language. He was the first to spread a knowledge in England of the new religious movement in Germany, of which Ronge was the chief leader, by writing "Notes on the Reformation in Germany" (London, 1845). Between his teachings and his life there was a remarkable consistency. Whatever he taught and believed, he practised. Among his other works are "A System of Phrenology," "The Elements of Phrenology," "Outlines of Phrenology," "Moral Philosophy, or the Duties of Man, Individual, Domestic, and Social," "Notes on the United States of America," "Phrenology applied to Painting and Sculpture," the "Life and Correspondence of Andrew Combe," the "Principles of Criminal Legislation and Prison Discipline Investigated," "Lectures on Popular Education," "What should Secular Education Embrace?" "Remarks on National Education," "On Capital Punishment," "An Answer to the Attack on the Constitution of Man by the Rev. C. J. Kennedy," and the "Relation between Science and Religion."—Abraham, eldest brother of the preceding, born Jan. 15, 1785, died Aug. 11, 1827, became a disciple of Owen, and sacrificed his fortune in establishing "the co-operative society" in Edinburgh, in furtherance of his socialistic theories. Long after this had failed, he made a new attempt in 1825, by forming a similar establishment on a larger scale at Orbiston, near Glasgow, which, however, proved unsuccessful. He wrote "Sketches of the Old and New Systems," and the "Religious Creed of the New System."—Andrew, younger brother of the preceding, author and physician, born Oct. 27, 1797, died Aug. 9, 1847. He was sent to a primary school in 1803, in [illegible] to a higher school, and in 1809 he was transferred to the rector's class under Dr. Adam. In 1810 he entered college, on leaving which he was by his father, very much against his inclination, indentured to a practitioner of medicine in Edinburgh. In 1835 he became physician of King Leopold, and in the following year he was appointed physician in ordinary to Queen Victoria in Scotland. He embraced fully the principles of phrenology, and among other works he wrote "Principles of Physiology," which passed through many editions and was translated into German; the "Physiology of Digestion," and on the "Physiological and Moral Management of Infancy," the latter of which was also translated into German.

COMBÉ, Marie Madeleine de Cyz de, foundress of a reformatory institution for penitent females in Paris, called *le bon pasteur*, born

den in 1656, died in Paris, June 16, 1692.
the death of her husband, from whom
d been separated after 18 months of mar-
removed to Paris, where she abjured
s of Calvin and became a Roman

RMERE, STAPLETON STAPLETON-COT-
count, a field marshal in the British army,
Denbighshire in 1769, entered the army
y age, and served in India in the war
ppoo Saib. In 1808 he was sent to the
an Peninsula in command of a brigade of
v. and participated in nearly all the great
from Talavera to the close of the war.
edly thanked by parliament for
d upon the conclusion of peace
to the peerage. He was afterward
Barbados, and commanded the Brit-
in India from 1822 to 1826. He also
d himself at the capture of Bhurt-
for which he was made a viscount.
e was appointed field marshal. He has
interest in politics, but is a skilful

TIONS, THEORY OF, in mathemat-
which determine the possible vari-
e grouping of any number of given
The signs and groups are technically
elements and forms. There are 3 pro-
of combination. The 1st, which is termed
consists in changing the order of
nts so that the same arrange-
er repeated. The 2d, which is spe-
d combination, consists in arranging
into partial groups, so that, with-
ing the arrangement, precisely the
nts are not repeated in any form. In
n, all the elements are contained in
In combination, each form may con-
2, 3, or any other number of elements less
e whole number given. The 3d process,
l variation, is a union of the other two.
in first making all the forms possible
ation, and then multiplying each of
orms by permutation. In permutation
change in the order; in combination,
ontents or matter; and in variation, in
The complication and possible number
s greatly increased when the elements
. The theory of combinations has
o ideas, sounds, colors, and even to
other material compounds; but its
al use is in mathematical analysis and in
lculation of chances. The first important
ution to its development was by Buteo
, who represented all the throws possible
dice. Pascal applied it to games, Mer-
to musical tones, and Guldin reckoned
mber of words which could be formed
letters. Leibnitz recognized its signi-
, and sought in vain to make use of it in
ering philosophical truths. Bernouilli and
labored upon it, but the first who gave it
tific character was Hindenburg in 1778;
has been subsequently developed by
ge, Laplace, Poisson, Pfaff, Eschenbach,

and Rothe. Among the treatises on the subject are the *Lehrbuch der combinatorischen Analysis*, by Weingärtner (Leipsic, 1800–1801), and the *Vollständige Lehrbegriff der reinen Combinationslehre*, by Spehr (Brunswick, 1824).

COMBUSTIBLE SUGAR, a substance resembling common rosin, and having some of the properties attributed to the Greek fire, prepared by stirring 1 part of finely powdered sugar in a mixture of 16 parts of concentrated sulphuric acid, and 8 parts of nitric acid, to which, when mixed, water has been added. This should be cooled to 60° or less before the sugar is introduced. The sugar becomes pasty in a few seconds, and is then to be taken out and plunged into cold water, when another portion may be added to the acid, and treated in the same way. The compound, after washing, is to be dissolved in alcohol, and precipitated by carbonate of potash, by which it is freed from the uncombined acid. It is again carefully washed and then dissolved in alcohol or ether, which being evaporated by a steam heat, the substance is finally left in appearance like transparent rosin. It is exceedingly inflammable and explosive, and when in the form of a fusee it is once ignited it appears incapable of being extinguished. It is insoluble in water, and is not affected by dampness. It may be applied to protect gunpowder from moisture in the form of a varnish, by dipping the powder into its alcoholic or ethereal solution, and then drying at a heat of about 120° F. The explosive quality of the powder would be rather increased than diminished by the operation.

COMBUSTION, a chemical process, in which bodies combine to form a new compound, with the evolution of heat, and usually light. In ordinary cases of combustion, oxygen is one of the combining bodies, and the substance with which it unites disappears with it in a gaseous form. It was formerly regarded as an essential element in combustion, but the phenomena of light and heat, characteristic of rapid combustion, are observed when chlorine combines with phosphorus and with some metals when these are in a powdered state; also in the action of cyanogen and potassium, and of sulphur upon iron filings and copper leaf. Some bodies also burn in the vapors of iodine, bromine, and fluorine. As commonly witnessed, combustion is a process taking place in the presence of atmospheric air, which furnishes the oxygen to support it; and it is conducted, not, as most other chemical operations are, for the sake of its products, but for the phenomena which attend it. The development of these depends upon the rapidity with which it goes on, and this distinguishes it from the other cases of oxidation, which are sometimes called slow combustion, as when metals rust, spirituous liquors turn to acetic acid, and the blood by respiration is oxidized. The views which prevailed respecting the nature of combustion before the discovery of oxygen gas by Priestley in 1774, and the development of its properties by Lavoisier in the succeeding year, were necessarily incorrect. With the ancients, fire was an element that devoured other bodies and converted them into itself. Dr. Hooke, in 1665, and Mayow soon after, advanced the opinion that there existed in the air a "nitrous spirit," which dissolved bodies susceptible to its influence, when their temperature was suitably raised, and that the light and heat were the sensible effects of the rapid motions taking place. This theory, though close to the truth, was for a long time lost sight of in the general acceptance of the celebrated phlogistic theory, which was advanced soon afterward by Becher, professor at Mentz, and ably sustained by Stahl, professor at Halle. They considered that in combustion a certain element, which Stahl named phlogiston (from a Greek word meaning to burn), left the burning body, and the product was this body deprived of its phlogiston, by regaining which it was restored to its original character; as sulphur or phosphorus when consumed became sulphuric or phosphoric acid, and regaining their phlogiston were again sulphur or phosphorus. It was known that the earthy "calx," into which some of the metals were transformed by fire, gained rather than lost weight; but this was explained by attributing to phlogiston a principle of levity. Notwithstanding the defects of the theory, it was still an important step in the progress of chemical science, serving first to group correctly together the phenomena of combustion, acidification, and respiration. Its nomenclature was incorporated with the science, and when Priestley made his great discovery of the new kinds of air, he gave to nitrogen, which he supposed to be a combination of air with the phlogiston of the combustible, the name of phlogisticated air, and to oxygen or pure air that of dephlogisticated air. Lavoisier, by subjecting the products of combustion to the test of weighing, showed that the combustible gained weight by the process, and he proved, on restoring it to its former condition (as in the case of a metallic oxide), that the substance taken up and given out again was the pure air of Priestley, to which he gave the name of oxygen, from its acidifying property (ὀξυς and γενναω). Thus was established the antiphlogistic theory, that in every case of combustion oxygen combines with the burning body. Dr. Black's theory of latent heat was adopted to account for the production of light and heat; the latter being evolved or rendered sensible when substances without change of form pass from a rarer into a denser state, also when a gas becomes liquid or solid, or a liquid solidifies. The oxygen of the air was supposed to contain heat and light in a latent state, which were evolved with its change into a more condensed form, and the products of combustion were supposed to have less combined or specific heat than the original substances. But this application failed in the case of combustion of solid bodies by explosion, the gaseous compounds expanding in some instances to 2,000 times their original bulk, and yet producing intense heat instead of cold, as the theory would require; and the specific heat of the new compounds, in this as in the combustion of charcoal, it was shown by Dulong and Petit, was often quite equal to, and sometimes exceeded, that of the combining bodies, and this, moreover, bore no relation to that evolved in combustion. Davy considered that the burning body and the supporter of combustion were in opposite electrical conditions, and that the heat and light were evolved in the discharge of these electricities; which view was also held by Berzelius, though unsustained by any positive proof. The production of heat is still an unexplained phenomenon; we may, until it is better understood, attribute its development to a combination of some element with the body consumed, or the oxygen, in accordance with the popular theory implied in speaking of its liberation, disengagement, &c. The relative quantities of heat evolved in the combustion of bodies is determined by the methods described in the article CALORIMETER. By such an instrument, Despretz ascertained the number of pounds of water which the burning of 1 lb. of different combustibles would heat from the temperature of 32° to 212° F. The following are some of his results:

1 lb. of	[illegible] of water.
Pure charcoal	[illegible]
Charcoal from wood	[illegible]
Baked wood	[illegible]
Wood containing 20 per cent. of water	[illegible]
Bituminous coal	[illegible]
Turf	[illegible]
Alcohol	[illegible]
Olive oil, wax, &c	[illegible]
Ether	[illegible]
Hydrogen	[illegible]

From such results Welter concluded [illegible]
quantity of oxygen consumed was [illegible]
of the heat developed, whate[illegible]
combustible; and the followi[illegible]
of water heated by Despret[illegible]
by the consumption of 1 lb. of [illegible]
much of the following substances [illegible]
confirm his view:

Hydrogen	29.5 lbs.	Alcohol	[illegible]
Charcoal	29.0 "	Ether	[illegible]

Other experiments, however, sh[illegible]
ciple is not of universal appl[illegible]
phorus, consumed with 1 lb. of [illegible]
producing phosphoric acid, de[illegible]
much heat as the substances abov[illegible]
raises 53 lbs. of water to the b[illegible]
1 of oxygen, and ot[illegible]
results. The h[illegible]
in which the ex[illegible]
case of phosphorus, which [illegible]
as to produce phosphorous ac[illegible]
lb. of oxygen only 28 lbs. of [illegible]
ing point. Charcoal also give[illegible]
according as it is burned wi[illegible]
of oxygen in each case, t[illegible]
oxide or carbonic acid. S[illegible]
been regarded as sufficientl[illegible]
upon it the method intro[illegible]
determining the [illegible]
bustibles by the [illegible]
by equal weights [illegible]

ther consideration of this subject, see FUEL.)—Carbon and hydrogen are the two common elements, which by uniting with oxygen produce combustion. They are furnished in a variety of forms suitable to this application, the source all which is traced to vegetable growth; this ever continues to gather up the pro- s of combustion, and, separating them by omposition, places them again in condition to ew the process. In combination they assume e form, and float upward with the air u by the heat, thus allowing the admission supplies of oxygen to constantly reach ted body. Though the combustible bod- enveloped in the atmospheric air, and ever disposed to unite with its oxygen, the cess cannot commence until the temperature the combustible has been raised to a certain when it is said to catch fire; the process b ns, and afterward evolves the heat y for its continuance. (See FLAME.) arrangement is like a wall between the gen of the air and the fuels, which man may pleasure remove. This preservation from necessary waste is still further provided for t manner in which the supplies are scat- u over the face of the earth, not enough in one spot for its combustion to affect general stock, nor for the heat it might gene- e to reach and inflame other collections of able importance.—The condition of the temperature, density, and the presence aqueous vapor, variously affects the process combustion. Increase of density adds to the quantity of oxygen in a given volume, and consequently may be expected to increase the rate of combustion. Sir Humphry Davy proved that this was so, and that the process was retarded in rarefied air. The fusees of shells have been observed to consume at a diminished rate in the rare atmosphere to which they are thrown; and in the condensed air of mines candles have been found to consume so rapidly that it was necessary to prepare them with special provision for burning in such situations. Such was the experience of M. Triger in sinking a shaft through quicksand to cut a coal bed near the river Loire in France, the method adopted being to force back the water by opposing to it the pressure of air driven into the tight iron curbing by a force pump. Under a pressure of between 2 and 3 atmospheres, much annoyance was occasioned by the rapid combustion of the candles, until wicks of flax were substituted for those of cotton. The effect of temperature is less understood, but so far as it diminishes the density of air it must retard combustion. A sensible difference is perceived in the rate of combustion of large fires connected with metallurgical operations in summer and winter, which is no doubt correctly attributed to the volatile products of combustion not so freely quitting the burning bodies to rise up in the rarefied air of summer as in the denser winter atmosphere, and thus retarding the operations. Aqueous vapor in some circumstances is found to retard combustion, in others to accelerate it. Unless subjected to the degree of heat necessary to decompose it, it takes the place of atmospheric air, and diminishes the proportion of effective oxygen present. Steam is employed as an active agent for extinguishing fires, and also in small quantity to increase their effect. For this purpose a jet of steam is discharged under the grate bars of a furnace, or the ash pit is made a reservoir for water, which is evaporated by the heat radiated downward, and the vapor carried up by the draught is decomposed in passing through the incandescent coals. Its oxygen takes up a portion of carbon, forming carbonic oxide, which, as it meets more oxygen, is converted into carbonic acid with the production of much heat. So its hydrogen seizes a portion of the highly heated carbon, and is converted into carburetted hydrogen, or in part escapes, till meeting an equivalent of oxygen it is burned with the reproduction of water. It was shown by the numerous experiments of Bunsen and Fyfe that a considerable increase of heat was thus gained over that consumed in the decomposition of the vapor. Its use, however, in practical operations, demands the exercise of some judgment; for in excess, or with insufficient supplies of air, its effect would be the reverse of that intended. So also the vapor should be made to come up through the bars, and not be raised from among the coals at the cost of a portion of the available heat generated by their combustion.—An opinion has long been current, and not among the unlearned alone, that combustion was retarded by the light of the sun shining upon the fire. This apparent effect is accounted for by some on the principle that all flames are less visible in a strong light. On the other hand, a series of experiments made by Dr. Thomas McKeever of England, and published in the "Annals of Philosophy" in 1825, support by their results the popular impression, and these conclusions are referred to by Gmelin in his "Handbook of Chemistry," without questioning their soundness. In these experiments tapers and candles were burned alternately in a dark room and in the sunshine in the open air, the result always being a more rapid combustion in the former. The chemical rays of the solar beam were supposed to interfere with the oxidation of the fuel, and this was confirmed by the apparent greater rapidity with which a taper was made to burn in the red than in the violet extremity of the solar spectrum. In 1857 a paper was read before the American association for the promotion of science, by Prof. J. L. Le Conte, describing a series of experiments recently made by him with the object of further testing this question. In these he adopted the precaution of securing absolute calmness in the atmosphere around the burning body, and of depriving the beam of light of its sensible heat, which might, by rarefying the air, retard combustion. He also by concentrating the rays increased the intensity of the solar light nearly tenfold, with the view of thus exaggerating and rendering more apparent their supposed influence. The cone of sunlight was made to strike upon the flame of a wax candle, counterpoised in a balance, its lower margin illuminating the charred portion of the wick, while the upper boundary of the pencil traversed the flame near its apex. In each experiment the candle was allowed to burn for 10 or 15 minutes, till a steady flame was obtained; and then, as soon as its weight was reduced to that in the opposite scale, a certain quantity (60 or 100 grs.) was removed from this, and the combustion was continued till the equilibrium was again established. Whether in the dark or in the sunlight, no sensible difference was found in the rate of combustion; but this decidedly varied with the conditions of the atmosphere as to barometric pressure and temperature.

COMBUSTION, Spontaneous, the ignition of inflammable bodies without the application of fire, and without obvious cause of increase of temperature. Occurrences of this sort, formerly very mysterious, are now explained by the well understood liability of certain bodies to undergo chemical changes which develop sufficient heat to set them on fire. Recently expressed fixed oils are particularly disposed to oxidize, when exposed to light and air. They then absorb oxygen, and give out carbonic acid and hydrogen. If the process goes on rapidly, as it usually does when the oil is diffused through light inflammable substances, as cotton, tow, the waste used for lubricating machinery, oatmeal, &c., the heat may be sufficient to set these on fire. This is the most frequent cause of spontaneous combustion. Cloths saturated with oil, or covered with varnish of oil and turpentine, have thus been inflamed. By being piled together in quantity, the danger is increased by the accumulation of heat. Bituminous coal lying in large heaps is liable to be ignited by the heat evolved in the decomposition of the sulphuret of iron which it commonly contains. At the mouths of the pits the slates and refuse coal, which contain the most of this mineral, and in which the process of decomposition is hastened by the heaps being wet with the rains, are often seen in combustion from this cause. The liability to it seriously affects the value of those coals in which pyrites is found in considerable quantity, rendering it hazardous even to transport them by ships. In 1794 a fire occurred from this cause in the royal ship yard in Copenhagen, which consumed 1,600 tons of coal and 1,400 houses. The rapid absorption of water by quicklime is also attended with development of heat sufficient to ignite combustible bodies in contact with the lime. Freshly burned charcoal has the property of absorbing moisture and rapidly condensing it in its pores, generating thereby so much heat that it is set on fire. This often occurs about collieries and in the wagons used for transporting the coal from the woods, and is commonly attributed to the fire not being entirely extinguished in all the pieces of charcoal. Several cases are recorded in the 42d vol. of the "American Journal of Science" (1842), pp. 169 to 195, of combustion occurring in heaps of hard-wood ashes, which had long lain undisturbed. The cause not being understood, they were in several instances regarded as cases of spontaneous combustion. It would seem, however, that addition of fresh ashes had been made to the heaps within a few days, or 14 at the most. Still no satisfactory explanation is given of the manner in which a heap of 25 bushels, accumulated during 2 years previous, could become completely ignited, as occurred in the cellar of President Lord, of Dartmouth college; nor how the combustion could commence in the centre of a box of ashes which had received no addition for about 2 weeks, as described by Dr. J. T. Plummer of Richmond, Ind. Such instances, however they may be explained, exhibit the danger incurred by placing ashes in wooden vessels or in contact with combustible bodies; and the danger would appear to be at all times imminent, though the ashes may have thus remained quietly for 2 years.—Spontaneous Human Combustion. This in medical works is treated as one of the causes of death incident to humanity; and numerous cases are cited, which harmonize so closely in the phenomena attending the occurrence, that eminent medical men have generally admitted the facts, although the chemical processes involved have remained unexplained. The fullest exposition of the subject is found in the French *Dictionnaire de médecine*, in the article *Combustion humaine*. The opinions of various writers are given, and their works cited down to the year 1833. The phenomena attending the cases reported generally agree in the victim being grossly intemperate, almost invariably a woman, fat, and rarely less than 60 years of age. Two well authenticated cases are, one of a young man, and the other of a young woman, both of them perfectly temperate, healthy, and neither particularly fat. With nothing like premonitory symptoms of disease, flame was communicated to the fingers of these persons, and remained upon them, playing about one or both hands, and setting fire to clothes and to envelop them. Immersion in water did not readily extinguish the fire; and even after it was thus made to disappear, it would again break out spontaneously. The effect did not extend beyond the hands, and the fire being extinguished, the burns were finally healed after the loss of the epidermis and many of the nails. In the case of one hand alone being affected, the temperature of this was found by the thermometer 3 or 4 days afterward to be 77° F., while that of the other hand was 62.6°. The flame in all cases of human combustion described is of a bluish color, obscure in the light, and extinguished with difficulty by water, which in some instances has appeared to render it more active. It is not readily communicated to combustible substances, the body even having been consumed so as to crumble to pieces when moved, without the clothes having been burned. (Dr. Apjohn, "Cyclopædia of Practical Medicine," article

"Combustion, Spontaneous Human.") In other
instances the combustion has extended to neigh-
boring objects. The trunk is first burned,
the vapors of the combustion, exhaling a
ug empyreumatic odor, are seen issuing from
mouth and nostrils. Portions of the head
extremities sometimes escape the action of
a, when all other parts are consumed to
s. These ashes are always a fatty kind of
and a similar fuliginous greasy matter of
odor is deposited upon objects around. In
nces a candle, fire, or lighted pipe,
ound near the remains of the victim.
s were universal, the phenomenon could
y be considered spontaneous, as maintained
pp, Marc, Maffei, Le Cat, and others. Its
rence being almost wholly confined to el-
y women, is in part accounted for by their
s being more disposed to accumulate fat,
y the fact that, if drunkenness is less com-
ong females, it is, when indulged in,
v c ied to greater and more unremit-
uan with men. The difficulties of
for the chemical changes involved
omenon have caused some eminent
ies on such subjects, as Liebig and Bi-
to reject the whole matter, and con-
at none of the many cases cited are well
ated. Flesh when saturated with al-
long immersion, as anatomical prepara-
does not exhibit the property of combus-
alcohol alone is consumed, the flesh
y burned on the outside. Neither
dead body of a drunkard ever been
thus combustible. Hence they argue
can have been no cases of burning of
n bodies except by the aid of the combus-
of other inflammable substances. M. De-
opposes these views, and sustains the
ry by a case which came under his own
ation, the details of which agree for the
part with the general phenomena already
d out. He suggests that a modification,
o the action of the forces in the living body,
render the tissues more combustible by their
ing a larger amount of alcohol, or by its
rmation into still more inflammable com-
He admits that the combustion is prob-
ver spontaneous, but commences by com-
ation with some burning body. Dr. James
n, professor of chemistry to the royal col-
of surgeons in Ireland, in the article al-
y referred to, cites several cases of inflam-
gases being generated in large quanti-
the bodies of living persons, developed
ut the different tissues, as well as in the
and intestines. If oxygen be present
g these, the mixture becomes of an explosive
cter, adequate to effect the rapid burning
ed of the cases of spontaneous combustion.
xplanation of the phenomena was first ad-
d by Dr. Marc. Phosphuretted hydrogen
of the gaseous products of the decompo-
of dead bodies, and as this inflames upon
ct with atmospheric air, the possibility has
suggested that it may be exhaled from the
living body, and thus give rise to its spontaneous combustion. So also the heat evolved in the chemical actions has been referred to as possibly sufficient to ignite the gases.—Instances are reported of individuals having been condemned and executed for murder, when it afterward appeared probable that the parties they were supposed to have killed had died by what is called spontaneous combustion. The small amount of combustible material consumed in cases of this nature, will always tend to indicate their character. The sex, age, and habits of the victim are all points of circumstantial evidence. So also the appearance of the remains, the trunk of the body in these cases being always the part which suffers most from the effects of the fire; while in ordinary combustion the extremities are more likely to be first consumed.

COMEDY, that branch of dramatic composition which represents the manners of common life, and the object of which is to amuse, by painting the vices and follies of mankind, and describing ridiculous situations. In France the name has been applied to every kind of dramatic work, whether its subject were grave or gay, and it became thus a general word, like the mysteries of mediæval times. The masterpieces of French tragedy were first called comedies. The primary object of comedy being amusement, the ultimate object is correction or reform, according to the old motto, *ridendo castigat mores*, to chastise manners by a smile. (For an account of the origin and history of comedy, see DRAMA.)

COMENIUS, JOHN AMOS, a Cech, whose real name was Komensky, remarkable for his early attempts at reforming education, born at Komna in Moravia, March 28, 1592, died in Amsterdam, Nov. 15, 1671, studied in Heidelberg and Herborn, was a teacher in Prerau and Fulneck from 1614 to 1620, when he lost all his fortune and was expatriated, like all Protestant teachers and ministers, and for some time lived as a teacher and writer in the Bohemian mountains. From 1632 he was bishop of the sect of the Bohemian Brethren in Lissa, then in Poland. In 1641 he was invited to England, to reform the schools, in which, however, he did not succeed, on account of the civil dissensions. At the request of Oxenstiern he now applied himself to the organization of a system for Swedish schools. In 1650 he founded the gymnasium of Saros-Patak, in Hungary. Returning to Lissa in 1654, he again lost all his books, manuscripts, and fortune by the Polish civil war of 1657, and spent the latter part of his life in Holland. As a writer in the Cechic language, he is highly esteemed for his classical style. As a school reformer, he was the forerunner of Rousseau, Basedow, and Pestalozzi, suggested a mode of instruction which renders learning attractive to children by pictures and illustrations, and wrote the first pictorial school book, *Orbis Sensualium Pictus* (Nuremberg, 1658). For instruction in foreign languages he recommended combining with the teaching of the foreign words, explanations of the ideas they express. His most celebrated works in this department, *Janua Linguarum Reserrata* (Lissa, 1631), and *Pansophiæ Prodromus* (Lissa, 1639), were translated into many languages.

COMET (Gr. κομητης, from κομη, hair,) a body partly, if not wholly, nebulous, revolving about the sun in an orbit usually more elongated than that of a planet. In early times comets were regarded with great dread, as miraculous appearances. Seneca reasons clearly to prove them analogous to planets, but Tycho Brahe was the first who actually treated them astronomically, proving that they were at a greater distance from the earth than the moon is. Galileo, Snellius, and Kepler took up the investigation and studied their movements, though without much success. Fifty years afterward, Hevelius suggested the possibility that the comet's path might be parabolic; and in 1681 Dörfel, a clergyman in Saxony, published a demonstration of the fact that the orbit is parabolic. Newton was also led by his law of gravity to regard the comet's orbit as an ellipse, or parabola, if we may apply that term to a very long ellipse. Dr. Halley, taking up Newton's ideas, discussed the observations which had been made on previous comets, and also observed carefully the comet of 1682. This led him to the discovery that the comet of 1682 was in all probability the same that had appeared in 1607, 1531, and 1456. He therefore predicted its return in 1757 or 1758. He could not, however, expect to see his prediction fulfilled, and, although he lived to the age of 84, he died 16 years before the comet returned. As the time of its expected return approached, the mathematicians, Clairaut, D'Alembert, and Euler, began to compute the retarding influence of the planets Saturn and Jupiter. Clairaut was the most successful, showing that Saturn would delay the return of the comet between 3 and 4 months, and Jupiter about 17 months, so that the comet should not come to its perihelion till April 13, 1759. A revision of his computations made the date April 2. The comet actually reached its perihelion on March 13; one of the most brilliant triumphs in the history of astronomy. Halley's comet returned again in 1835, the 5th authenticated return, within one day of the time calculated by Pontecoulant. It recedes during its 75 years to a distance from the sun greater than that of the newly discovered planet Neptune. Several comets are well known to have orbits lying wholly within the sphere of Neptune's distance. One was first examined in 1818 by Encke, and identified with the comet that had been seen in 1805, 1795, and 1786. Its return has been observed ever since at periods of 3.3 years. This comet is celebrated for having revealed, as many astronomers think, the existence of a resisting medium in the interplanetary spaces. Herschel and others dissent from this view of Encke, and attribute the change in the comet's motion to the gradual loss of its tail. Biela's comet was discovered Feb. 27, 1826. Its orbit was computed by Gambart at Versailles, and Clausen at Altona, and it was found to be identical with the comet of 1805 and 1772, its period being about 6¾ years. On Jan. 12, 1846, it was noticed at the national observatory, Washington, that this comet had separated into 2 parts, and the same discovery was made by several European observers on the 15th of that month. These 2 parts pursue their way independently of each other, and without any influence on each other that can be detected by our measurements. Prof. J. S. Hubbard has shown ("Astronomical Journal," No. 73) that the secondary nucleus was observed at Cambridge, England, 6 weeks before it was known to be in existence, the primary nucleus being then probably faint and nearly invisible, as it has since been observed that both nuclei are subject to sudden changes in visibility. Faye's comet was discovered in 1843, and made its 2d appearance in 1851, its 3d in Sept. 1858. The comet of 1770 is interesting from the great disturbance of its orbit by Jupiter. When discovered it was moving in an orbit of 5½ years, but it had not been seen before, neither has it appeared again. An accurate calculation showed that it had been revolving outside of Jupiter, had by that planet been thrown into the shorter orbit, and as it passed out was by the same planet thrown out again. Leverrier, in a thorough discussion of the problem (*Comptes rendus*, 1847–'8), has confirmed these conclusions. The comet of 1811 was famous for its great brilliancy. The comet of Feb. 1843, was exceedingly brilliant for a time, being observed on 2 successive days in the daytime before it was visible at night. It passed very near the sun, assumed a prodigious length of tail, 40° or 50°, and aroused the people of this country to an interest in astronomy not before felt. The orbit of this comet is difficult to determine, but is well discussed by Hubbard ("Astronomical Journal," vols i. and ii.). A comet was discovered by Donati, at Florence, June 2, 1858. During the 3d week in August the tail began to be developed, a series of nebulous envelopes being formed about the nucleus, blending together on the side opposite the sun, and streaming out as a tail. During the 1st week in October the nucleus was as bright as Arcturus, near which it passed, and bore a train of great brilliancy more than 20° in length. It approached to a distance from the sun less than that of Venus, and recedes to an incalculable distance, so that it is not known whether it has been seen at any previous approach to the earth. The nature of comets, especially of the tail, is a matter of great uncertainty. The nucleus obeys the law of gravity, uninfluenced by the motions of the tail. The material of the tail first moves toward the sun and is then repelled from it. This evident polarity leads to the natural conjecture that the tail is electricity itself. Bessel has computed the form of the tail, allowing

article to move forward by inertia, and
pulsive force from the sun, inversely pro-
ed to the square of the distance. The
thus computed agrees well with the ob-
form of several noted comets' tails. Prof.
of Harvard university, was led by the
of 1858 to the same calculations and re-
nd published them before he was aware
had been anticipated by Bessel. Prof.
, of Yale college, has also calculated the
the particles while yet in the envelope,
side of the comet nearest the sun.—The
itious fears of early ages have in this cen-
en replaced by the unfounded fear of the
collision with a comet. Sir Isaac New-
s the first to show that the orbit of a co-
n be calculated from 3 observations of its
n in the sky, at 3 different times; but the
of the observation are, of course, to be
s carefully as the positions of the comet.
bject has been pursued by many eminent
mers and mathematicians since his time.
ge, in the "Berlin Memoirs" for 1778 and
nd in the 2d vol. of his "Analytical Me-
," gave a theoretical and perfect solution
problem. Its practical application was,
r, difficult. Laplace, in his *Mécanique*
gives a method more simple in practice.
s method, in the 3d vol. of "Delambre's
omy," is simple and direct, although not
ecise. Legendre's method, explained by
oulant in his "System of the World,"
rkable for containing the first exposition
method of least squares. In 1820 Legen-
dified his method on the basis of Ivory's
n. Mr. Lubbock ("Memoirs of the Royal
omical Society," 1830) simplified the al-
work in certain cases. All these meth-
pose the comets to move in a parabola,
se of infinite length. If such an orbit
t account for the comet's motion, that is,
comet is moving in a smaller orbit with-
ordinary distance of the solar system, its
ust be calculated as an ellipse, by Gauss's
ry of the Movements of the Heavenly
"

INES, or Comynes, Philippe de, a
statesman and historian, born in 1445,
château of Comines near Lille, died
6 or Oct. 17, 1509, at his domain of Ar-
. He stood high in the favor of Charles
gundy, afterward Charles the Bold, and
asion of Louis XI.'s imprisonment by
at Péronne, succeeded in bringing about
of peace between them. In 1472 he for-
he cause of the duke of Burgundy and
councillor and chamberlain of Louis XI.,
mpensated him so amply for the loss of
perty, which had been confiscated by
, that he soon became one of the most
y and influential noblemen in France.
ath of Louis, however, proved fatal to his
s. He was no favorite with Anne de
n, the regent, and he was imprisoned on
e of conspiracy against her. On the ac-
of Charles VIII., however, he was again
employed in the public service, but went into retirement after the advent of Louis XII., who seemed reluctant to favor him, although he left him in possession of a pension. The fame of Comines rests not only upon his astuteness as a statesman, but still more upon his *Mémoires*, which give a complete view of the political affairs of his time, and present a vivid picture of the character of Louis XI. They have been frequently printed. Lenglet Dufresnoy's edition, London, 1747, 4 vols. 4to., is still sought for, especially on account of its annotations; but the best and most recent is that published by Mlle. Dupont for the society of French history, 3 vols. 8vo., Paris, 1850. Comines figures in Sir Walter Scott's romance of Quentin Durward.

COMITAN, or Comitlan, a town in the state of Chiapa, Mexico; pop. 10,000. It contains a fine church and a large Dominican convent. It is chiefly supported by the contraband trade; as, in consequence of the heavy duties at the Mexican ports of entry, most European goods consumed in southern Mexico are smuggled hither through Balize and Guatemala.

COMITIA, the public assemblies of the Roman people for the transaction of important political business. There were 3 different kinds of comitia, corresponding to the 3 great divisions of the Romans: the *comitia curiata*, the *comitia centuriata*, and the *comitia tributa.* The comitia curiata, or assemblies of the *curiæ*, were the original assemblies instituted by Romulus, and managed all the great concerns of the state prior to the establishment of the comitia centuriata. They elected the kings and other chief magistrates, enacted and abrogated laws, and judged capital offenders. But after the institution of the comitia centuriata, their prerogatives were gradually abridged, till almost all the great powers which they once exercised were wrested from them, and hardly any remained with them, save those minor ones which they had possessed from the beginning, in common with the higher rights annulled. The comitia curiata were originally called together by the kings, but in republican times generally by some great secular or sacerdotal magistrate. They were composed of those Roman citizens who were members of the curiæ, dwelt within the *pomærium*, and conformed to the customs and rites of their respective wards. The meetings were not held periodically, but as often as there was business to transact. When the members were assembled, and the omens propitious, the *rogatio*, or matter to be considered, was read, and then each curia, after deciding apart on the question, gave its vote, and the votes of the majority of the curiæ determined the fate of the measure, or, if it was a case of election, that of the candidates. These assemblies were held in that part of the forum called the *comitium.* The comitia centuriata were instituted by Servius Tullius, the 6th king of Rome, with the view apparently of uniting in one body the different sections of the Roman people. Having compelled every man to give in an accurate account of his substance, he divided the citizens into 6 classes, according to their wealth, and then subdivided these 6 classes into 193 centuries. Of these centuries he composed the comitia centuriata, which were held in the Campus Martius, for the election of consuls, censors, and prætors, for the trial of persons accused of what was termed *crimen perduellionis*, or treason, and for the confirmation or rejection of such laws as might be submitted to their consideration. The most usual time of meeting was about the end of July or beginning of August in each year. When the centuries were assembled, they cast lots for priority of suffrage, and the century to which the lot fell voted first, and was styled *centuria prærogativa*. All the others voted in the order of their classes, and as they were summoned, and were thence termed *jure vocatæ*. The presiding magistrate having ordered the prerogative century to be called out to give their suffrages, its members came forward and entered an enclosed space named *septa*, or *ovilia*, where, if it was a case of election, every man received as many tablets as there were candidates, every tablet having inscribed on it the initial letters of one candidate's name. The septa contained numerous large ballot boxes, and into one of these the voter cast that tablet which bore the initials of the name of the candidate whom he favored. If, however, it was a question of the confirmation or rejection of a law, only two tablets were handed to each voter, on one of which were written *U. R.*, the initial letters of *Uti rogas*, "Be it as thou requirest," and on the other, *A.*, the first letter of *Antiquo*, "I reject it," or literally, "I vote for the old law." At each ballot box were stationed certain officers called *custodes*, who took the tablets of every century out of the ballot box, and numbered them by putting a puncture in another tablet for every one deposited. Before the introduction of the ballot system, however, when every citizen voted *viva voce*, an officer called a *rogator*, stationed at the entrance of the septa, asked each individual for his vote. In a case of the election of magistrates, or the confirmation or rejection of laws, equality of suffrages nullified the vote of the century; but in juridical cases, equality of suffrages was deemed an acquittal of the accused. The comitia tributa, or assemblies of the tribes, were not established till 491 B. C. They were sometimes presided over by the tribunes of the people, sometimes by the consuls or prætors, and were summoned for the election of tribunes, ædiles, quæstors, and other inferior magistrates, for the trial of minor criminals, and for the enactment of special and general statutes. Their place of meeting was not fixed; occasionally they were convened in the Campus Martius, occasionally in the forum, and at times in the circus Flaminius. These were the democratic comitia. Their laws were termed *plebiscita*, or decrees of the plebs, and, unlike the other comitia, they could be called together without the sanction of the senate. Beside these great assemblies, there were in the later ages of the republic lesser comitia, termed *comitia calata*, which were held for the election of priests and the regulation of testamentary matters, and in which the people acted only as witnesses.

COMMA. I. In writing and printing, the sign or point (,) used to mark the less important divisions of a passage, and the shortest pause in reading. II. In music, an enharmonic interval equivalent to the 9th part of a major tone. It is the smallest of all the intervals, and is chiefly employed by theorists to show the justness of the concords. In practice it is barely appreciable.

COMMANDERY, a species of benefice, or an honorary dignity, belonging to certain of the orders of chivalry, and conferred upon aged knights who had rendered worthy services to the order or to the state. The term was first used in the 13th century, and was applied to sums saved from the revenues of the order, for the support of warriors fighting against the Mohammedans. It was afterward applied to benefices distant from the residence of the order, and over which a knight was set to collect the revenues. Subsequently, the system of benefices having been abolished with the decline of feudalism, the orders of chivalry preserved the name after they had lost the substance, and conferred the honorary dignity and title of what had formerly been a revenue. Among the knights of Malta, those to whom commanderies were given were called commanders, and were rather the farmers than the beneficiaries of the order, since they paid a certain rent or tribute to the common treasury. The grand commander was the first dignitary of the order after the grand master. When the religious houses in England were suppressed by Henry VIII. there were more than 50 commanderies in the country. There were commanderies also in the orders of St. Bernard and St. Anthony, and in the Spanish orders of St. James, of Calatrava, and of Alcantara.

COMMELIN, a Dutch family of French origin, whose most prominent members were JÉRÔME, a printer, born in Douay, died in 1598, who embraced Protestantism, emigrated to Geneva, afterward officiated at Heidelberg as librarian of Frederic, elector palatine, and published there several valued editions of the Greek and Latin fathers; ISAAC, also a printer, born in 1598, died in 1676, who wrote various historical works; JAN, born in 1629, died in 1692, and CASPAR, born in 1667, died in 1731, both of whom were eminent as botanists.

COMMENCEMENT, in the colleges of the United States, is the day when students receive the degree of bachelor of arts, and when the degree of master of arts and the honorary degrees of doctors in the professions are also conferred. In Cambridge university, England, it signifies the day when masters of arts and doctors receive their degrees.

COMMERCE, the interchange of commodities, is as old as the commencement of civilization. When it began is unknown, and the oldest writings we have show that it was in a state almost as perfect as it now is 15 centuries before the beginning of authentic profane history. The transaction between Abraham and Ephron implies a fixed condition of trade. Abraham paid for the field of Machpelah in silver money that was current with the merchants. Hamor, the Hivite prince, speaks of allowing the sons of Jacob to trade in the land. The brethren of Joseph sold him to a company of Midianites, who are called merchantmen, and who were carrying spices and other valuable articles to Egypt, there doubtless to exchange them for manufactures and corn. Egypt was the seat of great trade 40 centuries ago, but the external part of it was in the hands of foreigners, and was carried on by land. The whole story of Joseph and his brethren shows how high was the reputation of Egypt as an exporting country, as well as the systematic character of commerce in those remote times. All the modes of trade were then ancient and established. Commerce, though it has existed in every community having even the smallest pretension not to be utterly savage, has, on a large scale, and as a great pursuit, generally run into peculiar channels, and been particularly the work of certain peoples. Of these the Phœnicians were the earliest, in respect of the commerce of the East and the West. Their country was favorably situated for commerce with all the races that dwelt on the shores or in the islands of the Mediterranean, or of the waters connected with it; and the pillars of Hercules once reached, the temptation to pass into the ocean beyond must have been irresistible. They were early renowned in trade, and are mentioned both by the author of Genesis and by Homer. Their colonies were numerous, and the site of one of them (Gades) was so well selected that it is now a flourishing port (Cadiz), though founded 3,000 years ago. Their commerce was various and extensive, and, in fact, in the 6th century B. C. it embraced the entire known world, from India and eastern Africa on the one side to western Africa and northern Europe on the other. Tyre was then, what she has so finely been called, "the royal exchange of the world." The Carthaginians were Phœnicians by origin, and their commerce was of the most wide-spread character, particularly after the decline of Tyre. Much of it was carried on with barbarous nations by barter, and therefore it was commerce in its most exclusive sense. Their land trade was enterprising and lucrative, and by its aid they were able greatly to extend the profits of their navigation, selling even negroes in Italy and Greece. On the south, their caravans penetrated to the interior of Africa; in the north, their vessels reached the Scilly islands, and probably Scandinavia. Both Phœnicians proper and Carthaginians were exclusives in commerce, keeping to themselves knowledge of the countries they visited, and destroying others who visited them; though it is probable there is much exaggeration respecting their conduct in this and other respects, and we have but one side of the story.—The Greeks early showed considerable skill in commerce, and some of their states found in it the source of much opulence. They colonized greatly, and the modern Marseilles is the same with that ancient Massilia which was founded in the 6th century B. C., and was for many centuries one of the most successful seats of trade. On the shores of the Euxine they founded cities that were centres of most profitable commerce.. The spread of the Greeks contributed to narrow the range of Phœnician adventure. The commerce of Athens was great, and that wonderful state was as distinguished in trade as in arts and letters. Timber and fine wood, wines, undressed skins, wool, rigging materials, iron and copper, the coarser sorts of oil and honey, salt fish, wax, &c., were imported by the Athenians. One half of the 3,000,000 measures of wheat annually required by them was sometimes imported. The tin of Britain reached them by the overland route, in part, through Gaul, and by Massilia. The exports of Athens were proportioned to her imports. They consisted principally of manufactured articles, and embraced a large variety of objects. "All the choicest products of Sicily and Italy, of Lydia and the Pontus, of Cyprus and the Peloponnesus," says Xenophon, "were continually attracted into the Athenian marts, whence, in return, were conveyed to those different realms the creations of Athenian labor and skill." It is noticeable that Athenian commerce was at its height at the same time that Athenian genius was most prolific in philosophy, poetry, history, oratory, and the fine arts. Other Hellenic states were eminent in trade. Samos was so long before Athens, and a curious story is told of the first distant voyage of the Greeks having been made by one of her ships, to the west, and by accident. The Phocæans in Asia Minor were particularly enterprising, and sailed to Tartessus. They founded Massilia. The commerce of Ægina is still remembered by history. But of all the early Greek centres of trade the greatest was Corinth. That place had attained to eminence in it more than 1000 B. C. The Corinthians were called the wealthy by Homer. The Ionic league, embracing Miletus, Ephesus, and several other city-states, was renowned for its commerce. The position of Byzantium gave her a commercial importance that she has ever since preserved, often adding to it political empire. To the west, Corcyra attained to a commercial dignity second only to that of Athens among Greek communities. There was an overland trade that connected the remote Greek colonies of the Euxine with northern Europe, or which supplied them with the products of that region, among which was amber. Pytheas of Massilia, an eminent man of science, made two long voyages, about 4 centuries B. C., in which he reached Iceland, perhaps, and the Vistula. The system of consuls was established by the Greeks, and the Zollverein was invented by Athens almost 23 centuries ago. Rhodes was the last of the Greek states that followed commerce extensively, and her maritime code governed the sea, and, through its incorporation into that of the Roman empire, has affected the transactions of modern times.—The Etruscans carried on a large trade, not only with the Greeks and Carthaginians, but with countries beyond the Alps. The earliest commercial treaty of which any account exists was formed between the Carthaginians and the Etruscans. Between Carthage and Rome a reciprocity treaty was made 509 B. C., the very year after that event which is known as the expulsion of the Tarquins. The text of this treaty still exists. A commercial treaty between the same republics was made 348 B. C., and it is supposed that one was made between the two dates mentioned. These treaties show the superiority of Carthage over Rome in all the essentials of civilization in those times, and contrast strangely with the incidents of later history. The Romans were not a commercial people in any comprehensive sense, but they had the unscrupulous ambition and practical genius which secure success in trade. Fraud and violence were of more account with them than the slow processes of industrious application. The Mediterranean became more than once, while they were masters of most of its shores, the home of piracy on a scale as extensive as that which existed ages earlier, when trader and pirate had the same meaning. But still there was much trade under the Roman dominion, and the Mediterranean in the days of the empire, for a large part of the year, was covered with vessels from Gades to Alexandria. The police of the sea was much better kept under the imperial than it had been under the republican rule. Rome was the centre to which every thing tended. On the corn trade depended the existence of the people and the stability of the government, and this trade was carried on with the province of Africa, Sicily, Sardinia, Gaul, Spain, and Egypt. Alexandria, which was founded by the Macedonian conqueror in the year 332 B. C., with the deliberate purpose of making it the chief commercial city of the world, not only despatched great corn fleets to Rome, but was the port whence the spices, gums, silks, pearls, diamonds, and numerous other articles of oriental origin, were distributed to the West. The trade of Asia was carried on principally by land, but from an early period there was commercial intercourse between India and ports on the Red sea. Under the wise rule of the Ptolemies, Egypt became the agent between the East and West, and the Roman rule encouraged this source of wealth. Alexandria early justified the choice of its founder, and continued to be one of the principal commercial places of the world for some time after the conquest of Egypt by the Saracens. The Indian trade was always valued, and many places rose to opulence from the part they had in it. The most remarkable of these was Palmyra. The oasis on which it stood was undoubtedly frequently visited by the Phœnicians, and the place is supposed to have been one of the links of the commercial chain that connected Tyre and Babylon. Babylonia was the emporium of all western Asia for a long period, and the trade of all nations there centred. But after the Persian conquest the country became poor, and the intention of Alexander to make Babylon his capital was frustrated by his early death. Had he lived, the commercial importance of Babylon would have revived. No man of antiquity had so large ideas on commerce as Alexander. Palmyra is said to have been founded by Solomon, who encouraged commerce. When the Romans began to appear to the east of Taurus, Palmyra was an opulent and a powerful city, which it continued to be down to the time of the emperor Aurelian. Its consequence came altogether from trade, as it lay in the direct route between the West and the East. Maracanda, the modern Samarcand, was another city which derived its importance from commerce, the Indian trade helping to enrich it. Bactra was another, and is pronounced by high authority to have been the commercial centre of eastern Asia. In India itself commerce was successfully pursued and held in high honor from the earliest known period, and both the home and foreign trade of that country must necessarily have been broad and lucrative, though the value of Indian commerce has always been overestimated. The Chinese traded to Hindostan and other distant countries. The entire East was full of people who were ingenious and industrious, and whose labor and skill supplied abundant and various materials for commerce. Alexandria was the chief place whence all the products of the East were bought and sold for the West, finding their way to Britain and Scandinavia. There flowed into the same port all the products of the West, but few of which, however, were wanted in India. What was taken from that country was mostly paid for in gold and silver, the annual amount of which in the time of Pliny was nearly $4,000,000 of our money. The papyrus was exported from Egypt. The commerce of the Roman empire was limited by the fact of the general resemblance in the character of that empire's productions, natural and artificial. Wool, so extensively used, was everywhere produced, and so was leather. The difference in the wines of the various countries was not sufficiently great to cause them to be extensively exported, though the best vintages of Greece and Asia found their way to Rome, for the use of the wealthy classes. Oil, too, was a common production. Those articles of general consumption in modern times that enter so greatly into commerce, as sugar, coffee, tea, tobacco, &c., were unknown to the Romans. Numerous manufactured articles, also, which we hold to be of prime necessity, were equally unknown to them. On the other hand, the transportation of wild animals for the popular sports, which required numerous vessels and seamen, is not known to modern commerce. Many hundred cities had amphitheatres, and the consumption at Rome alone was enormous. Africa was the principal source of supply. The exportation of marble from Asia and Greece was extensive, while navigation was increased by the carrying of pictures, statues, columns, pavements, and other eastern and Hellenic spoils, to Italy. The slave trade was pursued with vigor, and embraced all races of men with comprehensive impartiality, from the Troglodyte to the Greek. The African slave trade then flourished, and it dates from immemorial antiquity. The shores of the Euxine at one time were to Europe what the west coast of Africa was to America for the 3½ centuries that followed the great maritime discoveries. The very fact that the first cost of slaves, in vast numbers, on one occasion, was only 70 cents a head, shows how extensive must have been the slave trade in the latter days of the republic.—The fall of the Roman empire could not destroy commerce, though the many and various causes that produced that fall had much effect on it. The work of trade still continued, and Constantinople was one of its centres. The Saracenic conquests affected it much. The trade of the Arabians was mainly by land, and was carried on from India to Algarve. It reached China, Tartary, and Russia, and also the interior of Africa. Though not great navigators, the Arabians are believed to have settled in Madagascar, and are known to have reached the Canaries. The Italian republics early showed that skill in commerce which was to produce effects so marvellous. Rising out of the ruins of the empire, they remind us of the states of Greece, as well from the valor of their people as from their enterprise and the extent of their operations. Venice, Genoa, Florence, and Pisa have almost monopolized attention; but there were other places that long flourished which are less thought of, Amalfi being one of them, and enjoying a valuable trade for centuries. The Indian trade was in the hands of the Italians, and was carried on either by the way of Egypt and the Red sea, or by the overland route, to the shores of the Black sea, where Genoa at one time had opulent colonies. The part which these mercantile communities had in the crusades is well known, and it was the consequence of their commercial success, which at the same time it vastly increased. Daru devotes 116 pages of his *Venise* to an account of the industrial condition of that republic at the time when the circumnavigation of Africa had been effected by the Portuguese, and was about to work a revolution in the world's trade. In the latter part of the 15th century, Venetian commerce embraced the world as then known. The coins of the republic were current from Iceland to Cathay. There were squadrons that sailed regularly to the Black sea, to Egypt, to Syria, and to northern Europe, all of them touching at various ports on their different routes. The last was called the Flanders fleet, because its final destination was some one of the Flemish ports, Bruges or Antwerp. It reached the north by the way of Barbary, the western shores of Spain and France, and England, London being one of the places at which it stopped. Though Florence was not possessed of so extensive an empire as Venice, and her naval means were not large, she was a great commercial state; and Florentine merchants and bankers were to be found wherever trade was prosecuted. The commerce of France was mostly in their hands. That strange influence which the Florentine mind exercised over the destinies of France in the 16th century was owing to the sway which Florentine commercial genius had gained in that country. It is generally attributed to the connection that was formed between the house of Valois and the house of Medici, which connection was the consequence, not the cause, of that influence. More than 500 years ago the revenue of the state of Florence, with a population not larger than that which Rhode Island now has, was equal to $3,000,000 of our money now; and two of her banks made a loan to England as large as that which the Rothschilds negotiated with the same country during the Russian war. The manner in which Genoa and Venice contended for supremacy, for generations, attests the extent and lucrativeness of their trade; for their wars were mostly naval, and no small part of the profits of their industry was swallowed up in senseless butchery, the means of which came from commerce. The banks of Genoa and of Venice are among the landmarks of the history of civilization.—Concurrently with the Italian states rose others. The Catalans were skilful navigators and wise merchants; and Barcelona, their chief city, rivals the renown of the first of Italy's cities. Her bank was founded in 1401, and her maritime code, the *Consulado del Mer*, was compiled, the first of all modern codes, 150 years earlier, and formed the basis of the mercantile jurisprudence of Europe in those times. She had factories and consuls in all parts of the trading world, and her business embraced that wide section of the earth that lies between England and the Levant. The little republic of Ragusa was distinguished for its commerce, and from its large merchant ships, called Ragosies, we have *argosies*, which word belongs to the poetry of commerce. When the Venetian Flanders fleet arrived at London and Bruges, it was in communication with that splendid creation of commercial genius, the Hanseatic league, which had factories in the Netherlands and in England. That league, which reclaimed the north from barbarism, originated in the 12th or 13th century, and extended from Bergen to Bordeaux, and from Rouen to Novgorod. The league had a factory in London, and it even waged successful war with England. The decline of this singular confederacy began 4 centuries ago, but its shadow still exists in Bremen, Lübeck, and Hamburg. When it was at its height, the Netherlands were, next to Italy, the most prosperous part of Christendom; and their superiority was due to their success in commerce. There is nothing more striking in the history of commerce than the rise of the Netherlands, first to opulence, and then to empire. That trade which the Dutch carried to so great an extent after they had thrown off the yoke of Spain originated many centuries earlier, and was the wonder of the Italians themselves before the civil war began. Philip the Good, duke of Burgundy, the first of the line of Valois who ruled over both Dutch and Belgians, established the order of the Golden Fleece in 1430, the motto of which expresses the sentiment that the reward of labor is not to be contemned. It was meant to be an expression of his sense of the importance of industry, and it was a significant one. The fisheries, from which the Dutch drew so great wealth, began in the 13th century, and they and all the Netherlanders were a commercial people long before any of them aspired to nationality. The land trade through Germany was an important commercial feature of the middle ages, though much hindered by toll-gatherers and robber nobles. France did not early excel in commerce, though the enterprises of the mariners and merchants of Dieppe, which carried them to the west coast of Africa before it had been visited by the Portuguese, forms some exception to the rule. The maritime enterprises of the Portuguese began about 1412, under the patronage of Dom Henry V., son of King John I., an enlightened prince, who for 52 years patronized the cause of discovery. He did not live to see the circumnavigation of Africa, and the establishment of Portugal's rule in the East, but they were the consequence of his labors. It was in course of these voyages that the modern African slave trade began, about 1444. These discoveries destroyed the power of the Italian states, and changed the course of trade. The discovery of America, which event synchronizes with that of the sailing to India by the cape of Good Hope, had much effect on commerce. Spain became an important commercial nation, but her misgovernment lost her Holland not far from the time that she conquered Portugal with her colonies; but while Holland was lost to her for ever, Portugal regained her independence in 60 years. Meantime the Dutch had become the first of commercial nations, which place they kept until England had obtained, through their assistance, a liberal constitutional polity. England, from her insular position, was early engaged in trade, but the conquest was injurious to its development. Still, trade went on, and London early attained that high position in commerce which she has so long held. Scattered through the history of the country, under the Plantagenets and the Tudors, are the most abundant evidences of England's commercial aptitude, as afforded both by incidents of peace and those of war. Her progress was stayed by the bad government of the Stuart kings, and it was not until after her political condition had become settled, at the close of the 17th century, that she commenced those grand strides which soon gave her the first place in commerce, and with it supremacy on the ocean, which she has sometimes abused. Her home industry has fed her commerce to an extent that is unparalleled, and it is that industry rather than her conquests that has caused her greatness. Nothing like her commerce has the world ever seen, though that of the United States is fast rising to supremacy. The latter began with the settlement of the country, and in the first generation had attained a respectable character, colonial vessels sailing to Europe, Africa, the West Indies, and beyond the cape of Good Hope. The policy of the mother country discouraged the colonial commerce to some extent, and the revolution was brought about as much to uphold the right of man to trade as for all other purposes. This was in strict accordance with the course of England herself, some of her most severe and costly wars having been waged to preserve or to obtain commercial monopoly or freedom, as the case may have been. Liberty, the application of steam to the purposes of commerce, the improvements in ship-building, the discovery of the gold of California and Australia, the unlimited freedom of trade between countries so extensive and so various in character as our states and territories, and the general acceptance of enlightened ideas on political economy, have caused our commerce, both foreign and domestic, to increase at a rate which none of our early statesmen appear to have expected; and, like England, our history may illustrate the remark of Raleigh, that "whosoever commands the sea, commands the trade of the world; whosoever commands the trade of the world, commands the riches of the world, and consequently the world itself." Indeed, the United States and England are, in a just sense, the only two great maritime nations. France, though she has exerted herself to become great on the ocean, and through commerce, has never occupied there more than a respectable position. Russia has her commerce on the ocean to create. The commerce of Germany has been greatly developed since 1815, through customs unions, and by other means. Spain is recovering from her prostrate condition, but it is not probable that she will ever again be a first-class maritime power. The old nations of northern Europe have relatively declined, but still their commercial rank is good. Brazil promises to be a commercial state of the first order. The treaties recently concluded with China and Japan promise a new development for mercantile intercourse with Asia. In modern commerce the Greek merchants take a prominent position. They monopolize the trade of the Levant, the Black sea, and the Danube, by well-conducted establishments in Constantinople, Smyrna, Alexandria, Odessa, Teheran, and other localities in the East, and by branch houses in London, Liverpool, Manchester, Marseilles, Trieste, New York, New Orleans, Rio de Janeiro, Calcutta, and in other great commercial centres. Many of the German merchants in London are also noted for their world-wide spirit of enterprise and for their consummate ability. The Mediterranean merchants of Genoa, Leghorn, and Trieste still retain a great influence in the shipping interest, and some of the ship-owners of Genoa are among the largest in the world. London is the great focus of modern commerce.—For the commercial statistics of different countries, see the respective heads.

COMMEWYNE, a river of South America, which rises in the E. highlands of Dutch Guiana, and after receiving the waters of the Cottica, falls into the estuary of the Surinam between forts Amsterdam and Leyden. Its course is nearly N. W.; its total length about 70 m.

COMMISSARY, a military officer whose duty is to provide food and conveyance, and generally to take care of the stores of an army. A congressional act of April 18, 1818, directs the appointment by the president, with the consent of the senate, of a commissary-general, who shall have the pay of a colonel of ordnance and as many assistants as may be necessary. In active service, he coöperates with the officer in command in concerting measures for obtaining supplies, and in determining the character and resources of the countries to be traversed. Modern inventions of portable mills and ovens, a regular kitchen battery, compressed provisions, and other means and appliances, have much diminished his labors.

COMMISSION, in law, a writ which issues from a court for various purposes, among which are the taking of evidence in foreign parts, or in cases of the illness of a witness. In England, it is also a writ which issues from the crown to certain persons to transact public business. In the army and navy, commissions are the instruments by which the officers hold their appointments.

COMMITMENT, the sending of a defendant to prison for safe custody in criminal cases, or of any person for contempt of court in other cases. The writ which authorizes the commitment was anciently termed a *mittimus*, but usually a warrant, and is often for brevity styled a commitment. The houses of congress exercise the power of commitment in cases of contempt.

COMMITTEE, a small number of members appointed by a general legislative body for the despatch of public business. Committees may be either standing or select committees. Standing committees take charge of such matters as form the ordinary business of the house, naval and military affairs, postal arrangements, &c. Select committees are appointed for a special purpose. A committee of the whole house is when the speaker vacates the chair and the house resolves itself into a committee to discuss the clauses of a bill.—A committee, in law, is the person to whom the guardianship of a person of unsound mind is committed.

COMMODORE (It. *commendatore*, a commander), the officer who commands a squadron of ships upon particular service, his own ship being distinguished by a broad pennant worn at the main. In the navy of the United States, captain is the highest rank, and the title of commodore has been one of courtesy merely, given for the time being to a captain commanding a squadron. By an act of congress, approved Jan. 16, 1857, captains commanding squadrons are hereafter to be denominated flag officers; consequently, the title of commodore is abolished in the U. S. navy.

COMMODUS ANTONINUS, LUCIUS AURELIUS, emperor of Rome, born at Lanuvium, A. D. 161, assassinated Dec. 31, 192, was the son of Marcus Aurelius and the younger Faustina, daughter of Antoninus Pius. He inherited all the vices of his mother, without any of the virtues of his father, and his advent to the throne (A. D. 180) was the signal for a series of cruelties, rivalling if not surpassing those of Caligula and Nero. Hastily making peace with the Quadi and other German tribes, he gave himself up to the vilest debauchery, and even his own sisters became the victims of his lust. Appearing as Hercules before the people, he slew thousands of beasts with bow and spear, and fought publicly as a gladiator many hundred times, while the affairs of the government were left in the hands of worthless favorites, the freedmen Perennis, Anterus, Cleander, Lætus, Eclectus, and others. The enormous taxes requisite to support his extravagance, a conflagration of Rome, and a famine, at length drove the people to despair, and disturbances broke out which caused the death of Cleander. Finally, his own favorites, finding that they were marked for execution, resolved upon his death, and the poison administered by his concubine Marcia working too slowly, the gladiator Narcissus was called to strangle him. The senate declared him an enemy of the republic, and commanded his statues to be broken, and his name to be erased from the public inscriptions. Several detected conspiracies, some victories over the Caledonians achieved by Ulpius Marcellus, and the addition of an African corn fleet to that of Egypt, are the principal events of his reign.

COMMON, RIGHTS OF. These rights consist of the use for certain purposes of land belonging to another. In the ancient law they were designated as common of pasture, of piscary, of turbary, and of estovers, and this classification is retained by Blackstone; but it lacks precision, for piscary does not belong to lands at all; and again, the right to the use of the water for fishing, &c., is in many cases all the estate that can be claimed by any one; and there are instances where such use is common to all persons without distinction. There is but one case which would come within the definition, and that is common of piscary in inland waters, the land under which is by the common law held to belong to the owner of the soil adjoining the water. This would give such owner the exclusive use of the water, except for navigation, but a prescriptive right may be acquired by another having no interest in the fee. The other rights relate altogether to husbandry, and consist of the right to pasture cattle or other animals belonging to farmers upon lands of another, and to cut turf and wood for necessary fuel. The common of pasturage is the most important of these, and has been treated of in the books much more fully than the others, but the principles applicable to each are substantially the same. This right is in the old cases held to be appendant, appurtenant, because of vicinage, or in gross. It was appendant when it belonged to arable lands which were originally part of the manor in which the common was claimed, and the commonable right was in such case limited to beasts of the plough, and such as were used for manure. Common appurtenant had no necessary connection of tenure, but might be claimed in other manors than that to which the land whereto the common was appurtenant originally belonged. Nor was it limited to any particular animals, but included every description, as hogs, goats, &c., as well as those which were used in tillage. The difference between these two was that the former grew out of the original tenure, and was a general right incident to all smaller estates parcelled out from larger ones, which did not need prescription to sustain; the latter was founded solely upon grant or upon prescription, which always implied a grant. Both continued to exist notwithstanding the alienation of the lands to which the common was appendant or appurtenant, and in case of alienation of part of such lands, the alienee acquired a commonable right in the proportion the lands conveyed bore to the entirety to which the right originally belonged. This equitable principle was adopted to prevent the overcharge of commonable lands by the multiplication of rights from the successive division of estates, so that there could be no increase of the original right; but whatever number of tenants became entitled, they could each have only their proportionate share. Thus the claim of a tenant who by the process of subdivision had become the proprietor of one yard of land, but set up a right of common appendant for the pasturage of 64 sheep (which was the whole right that belonged to the entirety of the original premises), was rejected. (Bennett *vs.* Reeve, Willes's Rep. 227.) This case attracted much attention on account of the great amount of learning and ability which it elicited, but the principle had been long before recognized by Coke as applicable both to common appendant and appurtenant. In Wilde's case, 8 Coke's Rep. 156 (Coke being at that time chief justice of the common pleas, in which the case was argued), it was held: 1, that common appendant or appurtenant was apportionable; 2, that the commonable land ought not to be subject to any other or greater charge than originally existed; though the court perhaps erred in assuming as matter of fact that there could be no increase if limited to cattle levant and couchant on the original premises, although the land might have been subsequently divided among several owners; 3, that in case of purchase of a part of the commonable land by a tenant claiming a right of common appendant, the right is diminished in proportion to the land purchased; but in the case of common appurtenant, it would be wholly extinguished by such purchase. And it was said in this case that if alienation was not allowed, all common appurtenant in England would be destroyed, for no land continues in so entire a manner, every acre together with another, as it had been *ab initio*, but for preferment of younger sons, advancement of daughters, payment of debts, &c., part has been severed. In Tyrringham's case, 4 Coke 36, the origin of common appendant is thus stated: "When a lord enfeoffed another of arable land to hold of him in socage (*per servitium socae*), as every such tenure at the beginning was, the feoffee should have common of the lord's wastes for his cattle which ploughed and manured his land; because it was *tacite* implied in the feoffment, for the feoffee could not plough and manure the land without cattle, and they could not be kept without pasture. The second reason was for the maintenance and advancement of tillage, so that such common appendant is of common right, and it is not necessary to prescribe therein." In case of the purchase, by the proprietor of the commonable lands, of any part of the lands to which common is appendant or appurtenant, the right is wholly extinguished as to the purchased lands, and the same rule if the whole should be purchased. Unity of possession of the lands to which and the lands in which the common belongs is an extinguishment of the right. It has long been settled that the proprietor of lands in which there is a right of common may enclose and improve part, provided he leave a reasonable amount for common.—Common because of vicinage is when the inhabitants of towns contiguous to each other have intercommoned without hindrance on either side. Yet this is merely permissive so far as to excuse what in strictness is a trespass; but no length of time, according to the opinion of Blackstone, will establish a prescription, but either town may bar out the other.—Common in gross is not attached to lands at all, but merely to the person. This right is not, however, multiplied according to the number of a man's heirs. By the English law, if the right descend to several, as in the case of coparceners (*i. e.*, where the descent is to daughters), the eldest shall take, but be liable to contribution. In the United States a different rule is held, viz.: that all the heirs must jointly possess or convey.—The right of common has been comparatively less important in this country than in England; but the principles of the common law have been, with few exceptions, recognized here. It would probably not be admitted in any of the states, not even in those newest settled, that the grant of a piece of land parcel of a larger tract held by the grantor would carry with it common of pasturage or fuel. It can arise only by express grant or by prescription, which, as before mentioned, is always founded upon a supposed grant. The courts of the state of New York seem not to have understood the ancient law when they assumed that common appendant was a prescriptive right, whereas, as we have shown, it was derived entirely from the nature of the tenure, and did not need prescription at all. Properly speaking, that species of common can hardly be considered as existing in this country. This and some other incidents of English manor or baronial estates are not recognized here. Common of estovers (fuel), it has been held in the state of New York, cannot be apportioned; as, if the person holding the land to which the common is appurtenant should convey part to one person, and part to another, the whole right is extinguished. The most usual mode in which the right of common arises in the several states is the ownership of lands by villages or towns, in which case all citizens of such village have a right of common, subject to being put an end to, however, by an ordinance of the village corporation, or a resolution at a town meeting.

COMMON CARRIER, one who undertakes for a compensation to carry goods generally. The term imports that this is done as a business. The carrying for hire in a particular case does not involve a liability to the same extent as that of a common carrier; yet this must be understood of a private undertaking, as for some particular person without any obligation to carry for others. If a vessel should make but a single voyage, but should be put up for carrying whatever goods should be delivered on board, this would constitute the owner or person having the control of the vessel a common carrier. On the other hand, when a vessel is not put up as a general ship, but is employed by the owner in his own business, even if he should allow the master to carry the goods of another and to receive the freight as a part of his (the master's) compensation, the owner would not be considered a common carrier. The principles applicable to this undertaking have been summarily stated in the article BAILMENT. The great diversity of cases, however, which occur in a commercial community like ours, requires a somewhat more extended exposition of those principles. These are essentially the same in respect to transportation of goods by water or land. The carriage of passengers is subject to a liability not less stringent, but modified in some particulars, which will be mentioned. The most important rule is that the common carrier becomes the insurer of the safe delivery of the property intrusted to him, except against inevitable accident, or what is usually called the act of God. Perhaps the exception would be better understood by a definition which has been adopted in the later cases, viz.: that the loss for which the carrier is not responsible must be such as human care and foresight could not prevent. A loss by the force of tempest or lightning is therefore not chargeable against the carrier; so when it is occasioned by a peril of the sea, even if there were no storm, as if a vessel should run upon a reef of rock or shoal of sand not appearing above the surface of the water, provided however that it was not specified upon charts, or otherwise known. Again, the mere force of the current may sometimes drive a vessel ashore or upon breakers, by reason of the failure of wind, when sails are depended upon, or by the vessel having been previously disabled by a storm, in either of which cases the loss comes under the head of inevitable accident. In respect to steamboats, the breaking of machinery by violence of winds or waves, and a consequent loss, would of course come under the same rule; but where the machinery should give way without an unusual stress of weather or other sufficient cause properly designated as a peril of the sea, it would be difficult to make out an exemption of the carrier under a strict application of the rule as before stated. Accidents are not unfrequent on steamboats and railroad cars, where no explanation can be given except some defect in the iron of which the engine or other essential part of the mechanical structure is constructed, and yet it may be a defect that could not be detected or guarded against by any degree of skill or care. The rule in such a case can hardly be considered as settled. There might be some danger in the relaxation of the ancient strictness which would exclude such an excuse; but on the other hand, as new elements and instrumentalities are introduced, allowance should be made for incidents that human prudence, such as may reasonably be expected, would not be sufficient to prevent. The facility with which evidence can ordinarily be procured to rebut a charge of negligence will, it is probable, be found a conclusive objection to allowing the exemption to rest upon that alone. The rule, as recently held by the courts of the state of New York, is that a railroad company is responsible for an accident which human care and foresight could have prevented, and that this responsibility extends as well to the manner of manufacturing cars and engines as to the conduct of the immediate agents in running them; and the question whether it was possible by such care and foresight to have prevented the accident is left to the jury to determine. (Holbrook *vs.* Utica and Schenectady railroad co., 16 Barbour, 113; Hegeman *vs.* Western railroad co., *id.* 353.) In inland transportation the rule as to inevitable accident is liberally construed; as when upon the Hudson river a vessel changing her tack near shore was by the sudden failure of the wind grounded and sunk, it was held to be the act of God. On a canal, the breaking away of the bank by an extraordinary flood, and the stranding of a boat in consequence thereof, would be held a sufficient excuse of the carrier for the damage that might ensue to property on board. Theft, embezzlement, or even robbery, by a force which the carrier could not resist, formerly constituted no exemption from liability for loss, except when it was by the act of a public enemy. The reason given in the old cases for holding the carrier responsible for loss by robbery was that there might otherwise be collusion and fraud which it would be difficult to prove. As this, however, had application only to a rude state of society, and was founded upon disorders which do not now exist in England, and have never existed in this country, there seems to be no propriety in enforcing the rule so strictly (*cessante ratione, lex etiam cessat*); and accordingly, a modification has been admitted to some extent, as when property was destroyed by a mob, the carrier was held not liable, but it was thought necessary to put the decision upon another ground, viz.: that the transportation was on a day when it was not usual to go, and for the special purpose of saving the property from the mob, but without succeeding as to part. (Edwards *vs.* Shinatt, 1 East, 604.) Destruction of property by fire while in the hands of the carrier, unless it happen by lightning, is at the risk of the carrier, and the goods are considered to be in his possession until actual delivery according to the terms of his undertaking. When there is no express stipulation as to the manner of delivery, or some known usage, the goods must be delivered to some person authorized to receive them, which will be the person named as consignee, or such person as he shall direct. And in case there is no one to whom delivery can be made, the goods should be stored, but they will still remain at the risk of the carrier. In England, it has been provided by recent statutes that owners of vessels shall be exempted from responsibility as common carriers for losses by fire, and also from liability for the loss of gold, silver, and jewelry by robbery or embezzlement, unless they have been specially mentioned in the bill of lading, or otherwise specified in writing by the shipper. We have no similar statutes in this country, and the only limitation to the general liability of the carrier is what may result from special notice given by him as to the terms upon which he will undertake to carry goods. As to any private undertaking, such as we have before referred to, there is of course no question as to the right of the carrier thus to restrict his liability; but there is some conflict in the decisions how far a common carrier can, in the conduct of his general business, vary the rules of law by a mere notice. It is settled that a notice is at all events of no avail unless distinctly brought to the knowledge of the owner of the goods; and it has been questioned whether, even then, it would be operative unless specifically assented to so as to constitute a special contract. (Hollister *vs.* Nowlan, 19 Wendell, 234; Cole *vs.* Goodwin, *id.* 251.) In the former of these cases it was said that, "notwithstanding the notice, the owner has a right to insist that the carrier shall receive the goods subject to all the responsibilities incident to his employment. The presumption is as strong, to say the least, that the owner intended to insist on his legal rights, as it is that he was willing to yield to the wishes of the carrier." Other rules have reference to the protection of the carrier against any liability beyond the fair intent of his undertaking. Thus the owners of steamboats on the Hudson river, although advertising themselves as carriers of passengers and merchandise, were held not liable for the loss of a package of bank notes delivered to the captain in his individual capacity. So in respect to the baggage of passengers, although the carrier by land or water is compelled to receive a reasonable amount upon the ground that compensation for it is included in the fare of the passenger, and becomes the insurer of the safe delivery thereof to the passenger at the place of his destination, yet under that denomination can be included only such articles as a man would generally carry with him for personal use as baggage. The carrier is, therefore, not responsible for samples of merchandise carried in a trunk, as baggage. To make him liable, it should be received by the carrier as merchandise. Nor is he responsible for money in a trunk unless upon notice of the contents of the trunk, and perhaps not even then without a special undertaking in respect to it. Jewelry or articles much exceeding in value what would be ordinarily taken for personal use would be subject to the same rule. In respect to the liability of carriers where the transportation is over a route in which several persons or companies have distinct parts of the route, as in the case of several railroads connecting with each other, the rule is that the person or company who receives the fare of passengers or freight of goods for the whole route is responsible as carrier for the entire distance; and it would make no difference as to his liability, if he should deliver tickets of the proprietors of the respective routes. If, however, the fare or freight is paid to an agent of all the different proprietors, then all are liable to be sued jointly. Some of the incidents of the carriage of passengers have been already adverted to. We need only add that reasonable regard is to be had to the comfort as well as safety of passengers, whether the transportation be by steamboat, railroad cars, stage coaches, or other conveyances. And, on the other hand, the proprietors of such conveyances have the right, and it is their duty, to prescribe such regulations as will best insure the convenience of passengers, and at the same time protect the proprietors themselves from any fraud or imposition. One other rule which relates as well to carriers of passengers as freight, is that the transportation must be within a reasonable time. In case of interruption by any accident, even if it be such as the carrier is not responsible for, still he is bound to furnish other means of conveyance to the end of the route with the utmost practicable despatch, or the passenger will be entitled to provide himself a conveyance at the cost of the carrier, or to claim repayment of the fare and other expenses which he has been put to. In respect to goods, the same despatch would not be required; regard is here to be had to what the parties may have fairly taken into their calculation. The freezing up of a canal or river is a sufficient excuse for the non-delivery of goods until f navigation. If the goods are tak- r at the place of detention, he must ata freight; but if not taken by the own- sponsibility of the carrier for the goods tinue during the time of detention, and delivery, according to his undertaking.

N LAW. By this term in English uence is sometimes designated that part w of England which has grown up from distinguished from acts of parliament; er being also classified as *leges non scrip-* tter as *leges scriptæ*. This last classifica- owever, far from accurate; for, as we e occasion to show more particularly in part of this article, the laws were at an iod repeatedly collected and promulgat- yal authority, and in later times have tained in reported decisions of the courts tises of writers upon law; and again, cient statutes, the records of which are , were incorporated into the common y others of which we have the record erely declaratory of the common law claimed to have existed before. Such *Magna Charta*, as confirmed by par- 9 Henry III., the oldest of the statutes an original record is now extant; so te 25 Edward III., relating to treason, ion of right, which was passed in 1628, ious other statutes of more modern rporting merely to declare the exist- and not to enact any new provision. ition of common law above given in- t merely the indigenous customs of the people, but also so much of the Roman on laws as have been introduced in ralty and ecclesiastical courts, as well ules or maxims which were borrowed sh judges and writers from either of stems. The term is also sometimes xpress the whole law, statutory or cus- as administered in the most ancient or termed common law courts, in distinc- the system of equity as developed in of chancery, the latter being of more wth, and intended for relief in cases re was no adequate remedy by the strict the common law. In a still larger he common appellation of the entire , including even the foreign elements gled with it, in distinction from the generally received among European and from the canon law, except so lopted in the ecclesiastical courts of

It is in the last sense that it is com- erstood in the United States, yet with ifications, growing out of its limited on under our peculiar political organi- In all the states except Louisiana the law has been received, but this has lerstood not to include statutes, except they had by their antiquity become n the common law, or had been recog- colonial legislation or by general usage. ral course has been to reënact the Eng- tes which it was deemed important to retain. In some of the states, however, many of the statutes have been admitted as having acquired legal validity without such reënactment. The ecclesiastical administration of law is also excluded, but this has been chiefly by a statutory establishment of courts in which the ecclesiastical has been united with civil jurisdiction. The principles of the canon law, with that exception, have remained in force in this country so far as they had become part of the common law.—In the exposition of the subject it will be proper to consider it in a twofold aspect, viz.: the development of the common law from its primary sources, and the peculiar principles by which it is distinguishable from other systems of law. The first branch of our inquiry is deeply interesting, as containing the true history of the English people, and thus illustrating the chief element of our own nationality. No other modern European nation has produced for itself an entire system of law. The Roman is the basis of all continental jurisprudence, and in some countries, as Italy and some of the German states, is still in full force as an original authority, modified only by political changes and local usages, which, however, have a similar relation and as limited a proportion to the original as the statutory has to the common law in England. In other countries, as Spain, it has been digested in common with the modern additions, but this does not supersede a reference to the original source for the resolution of any difficult questions; and lastly, in other countries, as France, Prussia, and Austria, it has been reconstructed into the form of a code, though it still furnishes the elementary principles, legal language, modes of reasoning, and in general the forms of proceedings of all these compilations. On the other hand, whatever foreign element may have been intermingled with the English law has been assimilated by a process that may be compared to chylification in the animal system. The primitive constituent of this law may be safely assumed to be the Saxon. Nothing can be traced from the Britons, either of local usages or of the Roman law as administered while they were subject to the imperial government. Whatever has been derived from the latter source was introduced long afterward, and chiefly through the Normans. The very language which we may suppose to have been spoken by the common people when Britain was a Roman province, was lost, or is to be traced only in Wales and Brittany. Sir John Fortescue (who wrote in the reign of Henry VI.), in his zeal to magnify the common above the civil law, maintained that the former was the more ancient, for that the customs upon which it was founded had existed from the earliest period, without interruption by the Roman, Saxon, Danish, and Norman conquests; and Selden, in his notes upon Fortescue, does not dispute the assertion, further than that he says customs were also introduced by the Saxons, Danes, &c. Coke also asserted that the common laws of England were of greater antiquity than any other human laws (Pref. 2d Reports), and quotes the opinion of Fortescue at full length (Pref. 6th Rep.). This extravagant hypothesis is worthy of mention only as an illustration of the singular tenacity of the English mind for whatever was of native origin, and the prejudice existing at every period against whatever was of foreign growth. In estimating the proportion that Saxon usages contributed in the formation of English law, it would be too limited a view if we should take into account only the records now extant of particular laws and forms of proceedings. These records are imperfect, and even if we had the entire body of laws so far as they were ever reduced to writing, it would furnish but a part of what then existed and was perpetuated, and again it would be leaving out the self-developing power inherent in the habits of the people. The nation continued to be essentially Saxon even after the Norman conquest. The tenure of real estate was indeed radically changed by the introduction of the feudal laws, yet with steady perseverance the middle class gradually obtained amelioration of that system, and ingrafted upon it many peculiar rules and forms congenial with the national character. So the Norman sovereigns undertook to revolutionize the whole judicial administration. The *aula regis*, consisting of the king and council, sought to convoke to itself the judicial business, which had before been chiefly transacted in the Saxon county courts, presided over by a sheriff and bishop. The Norman language was introduced as the law language at least of the *aula regis*, and of the superior courts into which that tribunal was subsequently resolved, and Norman lawyers and judges sought to introduce the forms of practice and even rules of decision to which they had been accustomed. Yet in spite of these disadvantages, Saxon customs still maintained their hold of the people. Terms were invented in Norman phraseology to express many of the judicial proceedings. The pleadings were indeed in Latin, but trials were conducted and decisions reported in the Norman. But underlying these exterior forms can be seen the same principles of right which constitute the earlier law of the country, and the administration of justice was still in fact practically in accordance with Saxon usages. This may be attributed in a considerable degree to the large amount of business which still continued to be transacted in the county courts, where the Saxon language and usages were strictly adhered to. The appointment of itinerant justices to go into the several counties of the kingdom for the trial of civil and criminal causes, which became a fixed custom in the reign of Henry II., must have also contributed largely to the perpetuation of provincial forms. Hence it may be justly said that the laws continued to be formed as new cases arose, by the same habit of mind after the conquest as before, and that the common law continued to be developed from the Saxon original even under the Norman sovereigns. Of the collections of Saxon laws there are mentioned: 1. The *Dom Bok*, or *Liber Judicialis* of Alfred the Great, which was designed as a code for the government of the whole kingdom, and is supposed to have consisted of the local customs of different parts of the country, viz.: (*a*) the Mercian laws, which prevailed in the counties bordering on Wales, and which may have retained some of the old British customs; (*b*) the West Saxon, which appertained to the southern and south-western counties. (*c*) the Danish, which had been introduced on the eastern coast, where the Danes had settled. It appears that some laws were taken from the Old Testament, and it is likely that Alfred may have taken some liberty with existing regulations, particularly with the penal laws, as by a new enactment making murder a capital offense. But whatever was not in accordance with the spirit of the people came very little into use, and the whole was much interfered with by wars and consequent civil disorders. It has been said by some writers (Blackstone and others) that this code was extant as late as the reign of Edward IV., but it is now lost. Hallam, however, questions the authenticity of the work referred to. 2. The compilation of Edward the Confessor, the basis of which was the previous code of Alfred, and was intended to be a complete collection of laws both customary and statute. This obtained great celebrity, being the system which was in force immediately prior to the conquest, and consequently identified by the Saxons with their nationality. When therefore they often demanded of the Norman kings confirmation of the laws of the confessor, they meant only the guarantee of the laws by which they had been formerly governed. This compilation is also lost. In some old writers there is a reference to a compilation begun by King Edgar, grandfather of the confessor, but this is supposed to be the same that was afterward completed by the latter. 3. A collection of ancient Saxon laws, canons, decrees of councils, and other public acts, was made by Lambard in the reign of Elizabeth, under the title of Αρχαιονομια, *sive de priscis Anglorum Legibus*. These laws are in Anglo-Saxon, and among them are some of Ethelbert, king of Kent (A.D. 561–636). To this collection additions have been since made by Dr. Wilkins.—The extent of the change of the laws made by the Normans has been the subject of much debate. It was chiefly in the tenure of real estate and the incidents resulting therefrom. On the one hand, it has been maintained by Coke, Selden, and others, that the feudal tenure existed among the Saxons before the conquest, but by Hale, and especially Sir Martin Wright, that it was first introduced by the Normans. Without entering upon that discussion, it will be sufficient here to say that principles relating to real estate are apparent soon after the conquest, radically differing from those recognized by the Saxons before that time. Among these may be specified, that landed property according to the Saxon laws was hereditary, that, with some exceptions, it descended to all the sons, that it could be aliened, mortgaged, or devised at the pleasure of the owner; whereas, not long after the accession of the Norman sovereigns, we find the descent of lands to the heir depending, at least in theory, upon the consent of the superior lord, as shown by the exaction of a compensation called a relief which the heir was compelled to pay; that the land descended to the eldest son, in exclusion of the others, and during the infancy of the heir the seignor or lord had the custody of his person and the care of his estate; the land could not be aliened nor mortgaged, nor devised without consent of the lord, nor sold under judgment for the payment of debts. Some of these restraints were relaxed in no long period afterward, as by a law of Henry I., which allowed a man to alien lands he had himself acquired, and which had not come to him by descent; this was modified in the reign of Henry II. by allowing alienation of purchased lands if he had other lands by descent sufficient to provide for his children, and if he had not, then he could only alien a part. So likewise in the reign of Henry II. alienation of a part of the inheritance was allowed upon the same conditions. But disposal of lands by devise was never allowed until the reign of Henry VIII., when the statute relating to wills was passed. In the system of judicature, among other changes was one which at the time was perhaps not designed to affect the mode of administering the laws, but which became the occasion of a vast extension of the jurisdiction of ecclesiastical courts and the bringing in of a foreign canonical law. This was an ordinance of William the Conqueror, by which the bishop, who had formerly sat in the county courts with the sheriff (the two together disposing of all causes, civil and ecclesiastical), was directed to hold a separate court for the trial of ecclesiastical cases. The bishops, being thus made independent of the secular courts, proceeded to appropriate to their separate jurisdiction a large number of cases, under pretence of their involving something of a spiritual nature, as tithes and benefices. So they claimed exclusive cognizance of all questions relating to marriage, on the ground that it was a spiritual contract, and this claim involved not merely the power of annulling marriages and granting divorces, but also of determining questions of legitimacy and bastardy. The probate of testaments, it appears, had previously belonged to them, and this carried with it the cognizance of legacies. Thus, for a considerable time, any questions relating to either, when incidentally involved in a civil court, were referred to the ecclesiastical court for an answer to the particular question, when the civil court proceeded with the determination of the case. Jurisdiction of the estates (that is to say, the personal effects) of persons dying intestate was obtained under a custom which is spoken of in a law of Henry I., that such effects were to be disposed of *pro anima sua*. This custom must have grown up after the conquest, for by the Saxon laws both real and personal estate descended in the same manner in case of intestacy. What would be most for the benefit of the soul of the intestate, it was claimed, the bishops were most competent to decide. In King John's charter (the original Magna Charta) it was expressly provided that the chattels of an intestate should be disposed of by the next of kin *per visum ecclesiæ*. This clause, though it is said to have been also contained in the charter of Henry III., was left out in the exemplification on the roll, 25 Edward I., from which the Magna Charta was copied in the statute books. Under this it became an admitted right of the ecclesiastical courts to issue letters of administration in cases of intestacy. The law to which ecclesiastical courts had been formerly subject had been first established by a national synod held A. D. 670, and was called the *codex canonum vetus ecclesiæ Romanæ*. Various laws were passed after that time for the regulation of ecclesiastical matters, all of which, together with the original code, were reviewed by William the Conqueror, with the assent of his great council. There was, therefore, a national canon law which had been prescribed or sanctioned by the legislature, and which did not depend upon pontifical authority. Under the new constitution of ecclesiastical courts, the clergy now, however, sought to introduce the entire canon law as promulgated at Rome. A compilation by Ivo de Chartres, in the reign of Henry I., contained many innovations upon the ancient law; but after the digest of the whole pontifical canon law by Gratian had been adopted at Rome, it became a favorite object with the English clergy to procure its recognition as the basis of their ecclesiastical law. As this compilation was derived chiefly from the Roman or civil law, the latter was also regarded with much favor by ecclesiastics, and they introduced public instruction at Oxford upon both the canon and civil law. Such, however, was the national jealousy, that in 1152 the king prohibited the reading of books of canon law, referring, it may be presumed, to the two compilations by Ivo de Chartres and Gratian. The doctrines of this foreign canon law being in many respects subversive of the authority previously exercised by the civil government over the ecclesiastical courts, a struggle took place in which the whole pontifical power was brought to bear in their favor. The constitutions of Clarendon, which were enacted by Henry II. with the assent of the great council, in 1164, and confirmed at a council held at Northampton in 1176, were intended as a final settlement of the disputed points. By these it was determined that questions concerning benefices (that is to say, the right of presentation) should be tried by the king's secular courts; that ecclesiastics should be bound to come into the king's courts to answer to any matters cognizable there; that there should be no appeal from the archbishop's court except to the king in person; questions in relation to benefices, when the matter involved was whether the benefice were lay or eleemosynary, were to be determined in the king's court by a recognition of 12 men (a jury); lastly, the ecclesiastical courts were excluded from jurisdiction of pleas of debt, which they had lately assumed upon pretence that they were due, *fide interposita*. In consequence of the king's remorse for the murder of Becket, these constitutions were not strictly executed during the rest of his reign, but they were not repealed.—It would exceed our limits to trace further the history of the ecclesiastical laws of England. It will be sufficient to say that by various legatine and provincial constitutions, the former being enacted by national synods, the latter by provincial synods, held either by the archbishop of Canterbury or of York, the canon law has been settled with sole reference to the exigencies of the church and kingdom of England, and its authority now rests upon a statute of Henry VIII., by which it was declared that all canons, constitutions, &c., then existing, and which were not repugnant to the law of the land or the king's prerogative, should remain in use. An incidental effect of the enlargement of ecclesiastical jurisdiction was that the civil law was referred to for the decision of many questions, and the rules thus adopted were of course recognized by other courts; but in addition to this, the law of England relating to personal property, which was comparatively deficient, received a large accession from the civil law, with which the judges had now become somewhat acquainted. The rules of consanguinity and therefore of descent, except the law of primogeniture, were taken wholly from the canon law, which in this particular differed from the civil. And even as to primogeniture, there was for a time an alternation between the feudal principle, which gave to the eldest son the entire inheritance, and the Jewish or canonical rule, which allowed a double portion to the eldest, but gave to the others also a share of the estate. Thus in the reign of Henry I. it appears that the eldest son took only the *primum patris fœdum* (the principal manor), the rest being left to descend to the other sons; but this rule was of short duration, for in the reign of Henry II. the eldest son was considered sole heir of the whole inheritance. This related to lands held by military tenure or knight's service; socage lands (which were held by other services, and finally for a mere pecuniary compensation), even as late as the reign of Henry II., descended to all the sons, but the eldest was entitled to the capital messuage. This was not, however, universal. The doctrine of representation was not entirely settled, and Glanville (who wrote in that reign) says that it was a question, when a man left a younger son, and a grandson by an elder son, which should succeed; and he expresses the opinion that if the elder son had been provided for by an appointment of land during his life, the grandson should have no claim against the uncle for the remainder, though perhaps the eldest son might himself have done so had he survived. Gradually, however, all lands became subject to the strict feudal rule of primogeniture, except in certain places, where, by special custom which had been unbroken, it was otherwise.—As to personal property and contracts, how extensively the rules of the civil law were adopted may be seen in the treatise of Bracton, *De Legibus et Consuetudinibus Angliæ*, which was published in the reign of Henry III. The arrangement of the subject is similar to that of Justinian's Institutes, and many principles are extracted from the Pandects, sometimes in the very language of the original. But Bracton was no servile copyist. He had a great legal mind, and he selected and applied the rules of law, from whatever sources derived, with much discrimination, and defined and explained them with precision. Such was his adaptation of legal principles to the peculiar circumstances and habits of the English people, that it was not understood by his contemporaries how largely he had drawn upon the civil law. During a long period, down even to the time of Coke, he held much the same relation to the common law that in later times Pothier had to the French law, with only this difference, that Bracton was also profoundly versed in the practice of the courts and forms of proceeding.—As our object is simply to develop the primitive sources of the common law, and the general principle or process of its formation, it will be unnecessary to trace minutely the successive changes from its earlier form to the later and more complicated system. It will be sufficient to refer summarily to some of the important incidents. 1. The relaxation of the feudal principle of non-alienation, until all restriction was removed by the statute *Quia Emptores*, 18 Edward I., and other acts; then the introduction of conditional fees, or estates tail, which, by the statute *De Donis*, 13 Edward I., were restricted from alienation, and the evasion of the statute by new forms of conveyance, viz., fines and common recoveries. 2. The prohibition of conveyances to religious houses and persons. This was first by the Magna Charta of Henry III., which was construed to relate to religious houses only; and in consequence the act *De Religiosis*, 7 Edward I., commonly called the statute of mortmain, was passed, by which the prohibition was extended to all persons holding for similar purposes; and in the statute *Quia Emptores*, above referred to, which gave general liberty of alienating lands, a proviso was inserted that this should not authorize any kind of alienation in mortmain. Common recoveries were resorted to by the ecclesiastics to avoid the effect of these disabling statutes; but this device was checked by statute 13 Edward I., which provided that the fiction should be disregarded, and the real right should be tried, and if not found in the religious corporation, the land should be forfeited. Next the ingenuity of the clergy devised a form of conveyance, by which, instead of the fee, the use only was given to the religious beneficiary, while the seisin remained in a nominal feoffee, and courts of equity, which were then under the direction of the clergy, held that the feoffee was bound in conscience to account to the *cestuy que use* for the profits of the estate. This device was, however, defeated by the act 15 Richard II., which enacted that uses should be subject to the statutes of mortmain as well as the lands. When the statute relating to wills, 32 Henry VIII., was passed, devises to corporations were excluded. By a subsequent act, 43 Elizabeth, a devise to a corporation for a charitable use was allowed, and this is now the sole right which religious corporations have for the acquisition of real estate either by deed or will. 3. The introduction of uses, as before mentioned, gave rise to a complicated part of the English law of real property. Great landed proprietors, for the purpose of perpetuating estates in their families, and to prevent alienation, resorted to the expedient which had been invented by the clergy, of conveying the use instead of the fee, and in the court of chancery such conveyance was held binding for any length of time. This gave rise to the statute of uses, 27 Henry VIII., by which the use was transferred into possession, or in other words, the estate vested in the *cestuy que use*. By a narrow construction of the act, its operation was to a great extent evaded by the substitution of trusts for uses, and under that denomination conveyances have been introduced which are enforced in chancery, but with some important modifications in regard to their legal effect. (See BARGAIN AND SALE.) 4. The various provisions of law in relation to personal liberty and rights. This is perhaps the most important part of the common law, but it would greatly exceed our limits to attempt to give even a summary of its history. A multitude of statutes were passed, at various periods, declaratory of the common law, or in aid of what was claimed as constitutional rights, the most important of which were the Magna Charta of King John, confirmed by Henry III.; the petition of right, passed in the reign of Charles I.; the *habeas corpus* act, in that of Charles II.; the bill of rights, in that of William and Mary; and the act of settlement under William III.—Three subjects remain to be considered, viz.: chancery, admiralty, and the modern commercial law. (As to the equity law as administered in the court of chancery, see CHANCERY.) The courts of admiralty have jurisdiction of maritime causes, which were considered to be out of the reach of the ordinary courts of justice. It was a peculiarity of the common law that every action was considered local, and was triable in a particular county. Hence causes of action which arose at sea, or in foreign ports, whether upon contracts or for injuries, could have no venue in any county in England. The objection in cases of contracts or injuries in foreign places has been obviated, in later times, by a fiction which represents the transaction to have taken place in an English county, and the common law courts have taken jurisdiction of that class of cases, with the exception only of what are purely maritime in their nature, which have been left exclusively to the admiralty. The proceedings in these courts are analogous to those of the civil law, yet not directly or entirely derived therefrom. The maritime laws of other countries are referred to, as well in respect to rules of decision as to the mode of proceeding, yet not as binding authority; for the law of England recognizes no foreign law as such. Common usage limited by divers acts of parliament has, however, admitted to a certain extent the principles contained in maritime codes, especially the Rhodian laws and laws of Oléron. The modern English commercial law has grown up chiefly within the last 200 years, and has attained its present complete state by the mere development of principles recognized by the common law. It is a memorable instance of the expansive power of law from natural resources. Statutes have had but little to do with it. The civil law, and the modern codes or systems founded thereon, have been no otherwise availed of by English judges than to aid their own reasoning. Lord Mansfield and other eminent judges were familiar with foreign jurisprudence, but they were able to decide commercial questions by a process of reasoning entirely congenial with the common law.—The 2d inquiry which was proposed at the beginning of this article, was a summary of the peculiar principles by which the common law is distinguishable from other systems of law. 1. Security for life, liberty, and property. We have already referred to the declaratory statutes by which personal rights are guaranteed. But it would be a mistake to suppose that these statutory provisions have constituted the real defence of English liberty. They are in fact but the expression of the stern, indomitable spirit of independence which has been the honorable distinction of the national character, and without which no charter or statutes could have availed any thing against arbitrary power. The statutes themselves at an early period were in fact too general in their terms to have furnished any sure protection against corrupt judicial construction by subservient courts, had it not been for the constantly renewed exhibition of persistent public feeling which could not be safely trifled with. The famous clause in the Magna Charta, which has been often called the foundation of civil freedom in England, was in these words: *Nullus liber homo capiatur vel imprisonetur, aut disseisiatur de libero tenemento suo, vel libertatibus vel liberis consuetudinibus suis, aut utlagetur aut exulet, aut aliquo modo destruatur, nec super eum ibimus nec super eum mittemus, nisi per legale judicium parium suorum vel per legem terræ. Nulli vendemus, nulli negabimus, aut differemus rectum vel justitiam.* (No free man shall be arrested, or imprisoned, or disseised of his freehold, or disfranchised of his liberties or customary rights, nor be outlawed or expelled from the country, or in any other manner destroyed, except by the judgment of his peers, or by the law of the land. We will sell justice to no one, nor deny it to any, nor delay its due administration.) These are energetic expressions, yet of what avail would they have been against a tyrannical Henry VIII., who would have held, as he did in some instances, that his own will was the law of the land; or a faithless Charles I., who could assent to the petition of right and evade its effect by falsifying the record; if the liberties of the commoners had depended upon a mere charter? Some of the later statutes are more specific in their provisions. The petition of right required the cause of arrest to be specified in the warrant under which any man was imprisoned. The *habeas corpus* act further provided for a determination of the sufficiency of the cause of arrest, and a discharge if such arrest should be found to be illegal. Other acts provided against the exaction of bail for an excessive amount, in cases where the arrest was lawful. It is to be remembered that all these and many similar statutes purported only to guard against encroachments upon rights claimed to exist by common law. It was common in the United States at an early period to incorporate in the constitutions of the several states, or to declare by statutes, some of the most important of the personal rights which have been the subject of controversy in England. There was, however, but little occasion for such reënactment. The privileges thus declared are inherent in the very structure of our society, and recognized by our common legislation. Our danger does not lie in that direction, but rather in too unchecked license. The Athenian state would, perhaps, furnish us a more apt precedent of the evils to which we are exposed, and the appropriate counteraction. 2. Trial by jury has been the most noticed of common law rights, because it belongs exclusively to the English, having been admitted in no other country until within a very recent period. It has been attended with doubtful success in France and some other states where the French code has been introduced either as law or precedent. Sir John Fortescue insisted that this mode of trial had not been introduced in other countries because a class of men could not be found there fitted to serve on juries. "For though there be in them men of great power and of great riches and possessions, yet they dwell not nigh one to another, as such great men do in England; neither so many inheritors and possessors of land are elsewhere as in England." (Fortes. *De Laud. Ang.* c. 29.) The meaning of this is, that in his time there was no middle class of men between the nobility and the impoverished peasantry; and it was undoubtedly true that no country in Europe then had a common people as well provided and intelligent as the English. But although at the present day there may not be the same difference that then there was, between England and other countries in the comforts of the commonalty, yet it is equally true in our time that there is a comparative deficiency of qualification still existing in continental countries for that office. It requires a training for many successive generations to fit men for judicial functions; it requires above all an individual independence, which has been peculiarly the character of the English people. Possession of a competence is also essential. It is related by the old writers that during a considerable period after the conquest, when the common people were oppressed and impoverished, it was difficult to maintain the Saxon administration of justice in the county courts, by reason of the lapsed integrity of the freeholders, who were usually assembled in those courts as jurymen. This led to a proceeding called an attaint, by which a jury was put upon trial for a false verdict, and a severe penalty followed conviction. The English character afterward improved, however, and the trial by jury has always been maintained in a great degree of purity. 3. The mode of proof in trials. The English law of evidence is an extensive branch of the law, and has been founded upon good sense. In criminal cases, the accused parties are not compelled to testify against themselves; and although upon preliminary examination before magistrates, the accused is permitted to make his statement, he is not compelled to do so. Much less was it ever admitted in England, except for a short period under the Tudors and 1st Stuart, to put a man to torture to extort his confession. This is mentioned by Fortescue as one superiority of the English laws, from which it may be inferred that the practice did not then exist, though the introduction of the rack is referred by Coke to the duke of Exeter, in the reign of Henry VI. It was not used in England after the reign of James I. 4. The rules of the common law relative to husband and wife cannot challenge the merit of superiority to the corresponding law in other countries. The personal property of the wife became the husband's so far as he could get possession; and it was with extreme difficulty, and only by the aid of the court of chancery, that she could formerly be protected in the enjoyment of any part of her property. The law has within a recent period, and especially in the United States, been ameliorated in favor of the wife, but this change has been by statute and not by any self-amelioration of the common law. Marriage can be dissolved only for one offençe committed after the marriage, viz., adultery. For some preëxisting causes, as impotence, fraud, &c., the contract may be declared null; but no subsequent cause but the one above mentioned is a ground of divorce. Under the same head we may mention the steady persistence in the ancient doctrine that a child born before the marriage is illegitimate. There has always been a special prejudice against any change of the law in this respect, perhaps at an early period owing to the general opposition to the canon law. *Nolumus leges Angliæ*

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the barons when it was proposed in the
Henry III. to legitimate children born
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of lesser consideration, the last and
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r is the mode in which it has been pro-
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Treatises of writers have no authority,
s sustained by decisions. It was thought
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)N SCHOOLS. Under the general head
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of instruction, public and private, so far
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title we purpose to give only an outline
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very well regulated state the advantage
universal education of the community
e so obvious that measures would be
effect it almost from the origin of the
This, however, has not proved to be the
n no country of antiquity was there any
provision for the education of all class-
rta, under Lycurgus, came nearest to
he education imparted by the state was
physical, and did not reach the peas-
ses. In Rome, while private schools
merous, their advantages only accrued
atricians and such plebeians as possessed
r. After the introduction of Christiani-
its accession to power, the duty of the
ies to educate the young was speedily
ed by the bishops and clergy. The
of this education was of course their
in the doctrines of Christianity, but it
first recognition of the duty of giving
ion to the masses. As early as A. D.
find the council of Vaison recommend-
establishment of public schools. In 800
at Mentz ordered that the parochial
hould have schools in the towns and vil-
at "the little children of all the faithful
earn letters from them. Let them receive
ch these with the utmost charity, that
mselves may shine as the stars for ever.
Let them receive no remuneration from their scholars, unless what the parents through charity may voluntarily offer." A council at Rome in 836 ordained that there should be 3 kinds of schools throughout Christendom: episcopal, parochial in towns and villages, and others wherever there could be found place and opportunity. The council of Lateran in 1179 ordained the establishment of a grammar school in every cathedral for the gratuitous instruction of the poor. This ordinance was enlarged and enforced by the council of Lyons in 1245. Thus originated the popular or common school as an outgrowth of the Christian church. Beyond this mingled scholastic and religious training, meagre as it was, the idea of education for the masses had not gone. It should also be remarked that while the passage of such decrees was an easy matter, their enforcement was more difficult; and while in the large towns and cities very considerable numbers of the poor thus received the rudiments of knowledge, in the more scattered population of the rural districts very few could read or write. It was not until the era of the reformation that the subject of popular schools received a further impulse. Amid his other labors, Luther found time to do good service to the cause of popular education. In 1524 he wrote an "address to the common councils of all the cities of Germany, in behalf of Christian schools," in which occur the following passages: "It is a grave and serious thing, affecting the interest of the kingdom of Christ, and of all the world, that we apply ourselves to the work of aiding and instructing the young. . . . . If so much be expended every year for weapons of war, roads, dams, and countless other things of the sort, for the safety and prosperity of a city, why should not we expend as much for the benefit of the poor ignorant youths to provide them with skilful teachers?" In 1526 he writes to the elector of Saxony: "Government, as the natural guardian of all the young, has the right to compel the people to support schools. What is necessary to the well-being of a state, that should be supplied by those who enjoy the privilege of such state. Now nothing is more necessary than the training of those who are to come after us and bear rule. If the people are too poor to pay the expense, and are already burdened with taxes, then the monastic funds which were originally given for such purposes are to be employed in that way to relieve the people." Nor did he content himself with these appeals; in 1527, with the aid of Melanchthon, the Saxon school system, as it was called, was drawn up by him, and through life the education of the young of all classes in free schools was one of the objects nearest his heart. The labors of Luther in this field were continued by Trolzendorf, Sturm, Neander, Ratich, Helwig, and Amos Comenius, and the Germans seemed destined to become the best educated people in Europe; but the breaking out of the 30 years' war in 1618 arrested most effectually the progress of all educational

improvements. About the middle of the 17th century, several of the German states passed laws making it compulsory on parents to send their children to school during a certain age. In the latter part of that century two men came upon the stage, whose labors introduced a new era into the history of education in Germany. They were Philip J. Spener and August H. Francke. The labors of the latter gave an impulse to the cause of popular education, which, through the influence of his disciples and followers, such as Zinzendorf, Steinmetz, Hecker, Rambalt, Basedow, Campe, Salzmann, and Pestalozzi, has been continued to our own times. In Prussia, the movement in behalf of a thoroughly popular system of education, though more fully sustained than in any other country on the continent, did not commence till the early part of the present century. Enactments rendering the attendance of the children at the schools compulsory upon their parents had indeed been upon the statute book since 1717, but it was not until 1809 that the habits and good will of the people were enlisted on the side of education. The Prussian schools are by law accessible to the poorest as certainly and fully as to the richest, and every provision which long experience and profound interest in their success can suggest, is adopted to render them as perfectly adapted to the wants of the people and the government of the country as possible. Scotland is the only other country of Europe which could boast at an early period of having a system of common or popular schools. These, like those of the early church on the continent, originated with the clergy. In 1560 John Knox urged the necessity of schools for the children of the poor, and claimed that they should be sustained on the charge of the kirk. The act of 1696 established common schools in every parish, to be supported in part by the parish, and in part by rate bills. These schools, which have diffused a more general elementary education among the people of Scotland than exists in any other nation in Europe except perhaps Prussia, have always been under the charge of the kirk; and since the secession of the Free church in 1843, schools have been organized in connection with each of its congregations.—It is on this side of the Atlantic, however, that we must look for the most full and complete development of the common school system which the world has ever seen. The Puritan settlers of New England were fully convinced of the necessity of universal education. They came here with no intention of founding a colony of semi-barbarians like the boers of South Africa; and accordingly we find that as soon as they had provided temporary shelter for themselves, they reared, in humble guise indeed, yet with willing hands, the church and the school house. The first schools established in the country, however, were not common or public schools. Free grammar schools, as they were called—that is, schools in which Latin was taught, and which were supported in part by the proceeds of land, houses, or money granted either by the town or by individuals, and in part by tuition money, and which were free only to the donors, and to them only in part—were established in Charles City, Va., in 1621, in Boston in 1636, in New Haven in 1638, in Salem in 1641; in Roxbury prior to 1645, and in most of the towns of New England within 4 or 5 years after their settlement; but these, though comprising at first perhaps the major part of the children of the settlement, were not common schools in the present sense of that term. The free public school (the common school of our time) was of New England origin, but whether Massachusetts or Connecticut is entitled to the honor of its first establishment is a mooted point. The first legislative enactment was made by Massachusetts in 1647. It provided as follows: "It is therefore ordered y^t every township in this jurisdiction after y^e Lord hath increased y^m to y^e number of 50 housholders shall then forthwith appoint one within the towne to teach all such children as shall resort to him to write and reade, whose wages shall be paid either by y^e parents or masters of such children, or by y inhabitants in generall by way of supply, as y^e maior part of those y^t order y^e prudentials of y^e towne shall appoint, provided those y^t send their children be not oppressed by paying much more y^n they can have y taught for in other townes." But if the general assembly of Massachusetts was foremost in legislative action for popular education, the town authorities of Hartford, although a younger colony, had at an earlier date taken broader and more liberal ground for the education of all classes; and as Hartford was the central and controlling settlement of the Connecticut colony, its action was but the precursor of the legislative action which followed a very few years later. A town school was established prior to 1642, and the funds for its support voted from the town treasury; and in 1643 a vote was passed, which in its spirit still governs the educational system of the state, "that the town shall pay for the schooling of the poor, and for all deficiencies." The colonies of New Hampshire and Vermont followed the example of Massachusetts and Connecticut, and established schools in every hamlet where the number of inhabitants and of children was sufficient to furnish employment and support to a teacher. The records of the general courts and of the towns show that the prosperity of these "fountains of intelligence," as they appropriately called the common schools, was an object of common solicitude; and though taxed as never people were before—taxed for the goods they imported from the mother country, taxed on their exports, taxed for their wars with the Indians, taxed for their wars with the French which had been induced by the mother country, taxed for the support of an able ministry, and the erection of churches—they never forgot to support and sustain the common school. We have seen that in Germany the 30 years' war broke up the

public schools which Luther and his
rs had reared with so much care; but in
ngland, amid almost incessant conflicts
the Indians and French, when the male
on was decimated in the successive
, the abandonment of the schools was
hought of. In 1670 the commissioners
plantations addressed to the governors
onies several questions relative to their
ion. To one respecting the means of edu-
, the governor of Connecticut replied:
-fourth of the annual revenue of the col-
laid out in maintaining free (common)
s for the education of our children." To
question Gov. Berkeley of Virginia re-
I thank God there are no free schools
inting, and I hope we shall not have these
ed years." Soon after the close of the
nary war, the lands in Ohio known as
n Reserve, belonging to Connecti-
into market. They were valuable
ready sale; the state was in debt, poor,
xhausted by the sacrifices of men and
she had made during the war, in which
ad furnished a larger quota in propor-
o her population, and kept them in the
onger, than any other state in the union.
roceeds of these lands would enable her
r her indebtedness and give her citizens
l relief from taxation; but with the men
day, as with those of a century and a
r, education was deemed preferable to
eedom from taxation, and the proceeds
t vast tract, now amounting to more than
,000, were solemnly consecrated to the
rt of the common schools of the state.
same cause Massachusetts set apart a
n of her wild lands in the then province
ine. The New England school system at
mmencement of the present century was
upon the following ideas: 1, the instruc-
f all the children of the state in the rudi-
of an English education, viz., reading,
g, elementary arithmetic, elementary ge-
hy, and grammar—this to be accomplished
ools in every precinct or district contain-
householders, or even a smaller number;
h district to be independent of every other
financial matters, hiring of a teacher, &c.;
perintendent or board of visitors in each
or school society, generally consisting of
sional men, and almost invariably includ-
e clergy, to examine the teachers, inspect
hools, prescribe text books, &c.; 4, the sup-
f these schools by taxation and rate bills,
oor being exempted from rate bills; 5,
of compelling attendance on the part of
wn authorities. Under this system a mod-
amount of education was diffused through
tire community. It was extended to New
Ohio, Pennsylvania, and the other new
settled by New England emigrants. In
ogress of time, as the result of a routine
, the standard of education was lowered
than raised, and it was felt that the con-
of the schools was not up to the demands of the time. The attention of philanthropic men in all parts of the country was directed to the subject, and in 1817 and the following years commenced what has been not improperly termed a revival of education, which is still exerting its influence for good throughout the country. The establishment of the public school society in New York, and of improved school organizations in Philadelphia, Boston, Portland, Lancaster, Pittsburg, Worcester, Hartford, Lowell, Providence, Cincinnati, &c.; the revision of the school systems of most of the New England and of several of the middle and southern states between 1821 and 1828; the efforts of Thomas H. Gallaudet, James G. Carter, and Walter R. Johnson, through the press, to elevate the standard of instruction and to create an institution for the professional training of teachers; the establishment of the "American Journal of Education" in Jan. 1826, and its subsequent issues under that title, and the later one of "American Annals of Education;" the improvement of text books; the conventions, town, county, and state, held throughout New England from 1826 to 1830 in behalf of common schools; the subsequent organization of teachers' institutes and associations; the founding of normal schools; the zealous and unwearied efforts of Horace Mann, Henry Barnard, and others; the plan of lecturing in every precinct in the states on the subject of education; the establishment of local school periodicals, as well as of those of a more general character, have all contributed to the promotion of this good work. The school system in the northern states has been regenerated, and possesses now all the elements of the highest efficiency.—The leading features of the existing school systems of most of the northern states, how much soever they may differ in details, are the following: 1. A system of graded schools for each town, embracing (*a*) primary schools for the younger pupils; (*b*) grammar schools for the older, in which are taught, in addition to the ordinary branches, philosophy, chemistry, history, and frequently drawing, vocal music, algebra, geometry, and French; (*c*) high schools for the more advanced, in which are taught the studies necessary for a business education, and in most cases the languages and higher mathematics. 2. The placing these under the constant supervision of one or more efficient visitors, who are paid for their services, and who ascertain by thorough examination the qualifications of the teacher. 3. The enforcement of uniformity of text books, regularity and punctuality of attendance. 4. Regular and frequent public examinations. 5. The establishment of school libraries in connection with all the schools. 6. The introduction of blackboards, globes, orreries, maps, charts, outline maps, and other apparatus for instruction. 7. The proper construction of school houses, for ventilation, warming, convenience of instruction, and promotion of order. 8. The establishment in every state of normal schools for

the instruction of teachers, and the holding of teachers' institutes for exercise and drill of those already engaged in instruction. 9. The organization of state teachers' associations for comparison of methods of teaching, and the establishment of state periodicals devoted to schools. 10. The extension of the privileges of these schools to all the children of school age in each state, either by supporting the schools entirely by taxation and the income of funds where they exist, or by taxation and small rate bills, which are abated where there is inability to pay, and the furnishing the necessary text books to the children of the poor. Some of the states have the advantage of considerable funds to aid in the support of their schools. The western states generally will, if their lands are properly managed, be largely endowed, as the 16th section of every township is granted for school purposes by the U. S. government, and other lands also are granted by the states. The southern states have not generally any well organized school system, and owing to their scattered population find difficulty in maintaining efficient common schools. The following table exhibits the condition of schools in the United States, and, though liable to some corrections from the imperfection of the census and the increase of the population in the new states since 1850, is in the main correct:

STATISTICS OF COMMON SCHOOLS IN THE UNITED STATES.

Name of State.	Date of Information.	Sq. Miles of Area.	Population, Census of 1850, & 1855 where taken.	Whole No. of Scholars attending School.	Whole No. of Children between 5 and 20.	Amount of An. Current Expenses for Schools.	Expenditure for School Houses, current yr.	Average Wages of Teachers, inclusive of board		Amount of School Fund
								Male	Female	
Maine	1857	35,000	583,169	151,637	208,854	$536,067	$114,040	$27 30	$14 08	[illegible]
N. Hampshire	1857	8,030	317,976	85,245	112,968	263,625	76,585	25 59	14 22	[illegible]
Vermont	1857	10,200	314,120	90,110	96,568	265,623	82,194	26 92	15 64	[illegible]
Massachusetts	1857	7,250	1,133,123*	203,031	283,000	1,415,864	588,214	46 63	19 17	[illegible]
Rhode Island	1857	1,306	147,545	25,898	85,909	151,843	88,064	34 50	20 34	
Connecticut	1857	4,750	370,792	71,269	111,717	822,253	....	29 00	17 25	[illegible]
New York	1857	46,000	3,470,459*	832,735	1,058,824	3,275,217	746,092	....	....	[illegible]
Pennsylvania	1857	47,000	2,311,786	593,837	528,754§	1,609,815§	392,125§	23 29	15 83	
New Jersey	1857	6,871	489,555	125,085	196,944	409,223	105,021	30 08	19 05	
Delaware	1856	2,120	91,532	10,230	81,544	80,510	....	....	....	[illegible]
Ohio	1857	39,964	1,980,329	603,347	792,019	2,299,918	293,040	27 71	16 22	
Indiana	1857	33,809	988,416	195,976	439,257	782,934	270,883	28 75	16 84	[illegible]
Illinois	1857	55,409	1,306,576*	823,893	869,064	802,995	....	25 00	12 00	[illegible]
Michigan	1857	56,243	511,729†	142,334	204,268	221,672	....	....	....	[illegible]
Iowa	1857	50,914	509,414‡	79,679	195,285	198,143	146,708	....		
Wisconsin	1857	53,924	552,451*	158,613	241,647	230,000	....	24 60	15 16	[illegible]
Missouri	1857	65,037	900,000‡	97,907	802,323	436,975	....	....	....	[illegible]
Kentucky	1857	37,680	982,405	139,845	287,212	289,513	....	....	....	[illegible]
Virginia	1857	61,352	1,421,661	41,608	414,318	156,000	....	....	....	1,441,7[illegible]
Maryland	1854	11,000	583,034	33,111	156,896	70,000‖	....	....	....	[illegible]
Louisiana	1856	41,346	587,774*	36,000	96,280	200,000	....	....	....	[illegible]
Tennessee	1856	44,000	1,002,717	126,317	288,538	201,976	....	....	....	[illegible]
N. Carolina	1856	45,000	869,039	150,000	245,000	272,320	....	25 00	20 00	[illegible]
Georgia	1857	58,000	935,090	77,015	275,316	23,000	....	....	....	[illegible]
Alabama	1857	50,722	841,704*	89,160	171,073	490,690	....	....	....	[illegible]
S. Carolina	1857	30,213	668,507	19,132	114,282	196,800	....	....	....	..
Mississippi	1857	47,151	606,526	18,746	183,903	86,000	....	....	....	[illegible]
Arkansas	1856	52,198	247,112†	....	75,000	100,000	....	....	....	[illegible]
Florida	1856	59,268	110,823*	....	22,512	46,060	....	....	....	[illegible]
Texas	1857	274,356	212,592	....	104,318	125,000	....	....	....	[illegible]
California	1857	155,500	507,067‡	9,717	26,170	156,712	....	....	....	

* Census of 1855. † Census of 1854. ‡ Census of 1856. § Exclusive of the city of Philadelphia. ‖ Returns imperfect.

COMMONS, HOUSE OF, the lower house of the British parliament, first recognized as a part of the national government in 1327, on the accession of Edward III. The house consists, in 1858, of 467 English, 29 Welsh, 53 Scotch, and 105 Irish members; total, 654. The presiding officer is called the speaker, who is chosen by the house of commons from among its own members, subject to the approval of the crown, holding his office till the dissolution of the parliament in which he was elected. His salary is £6,000 a year, exclusive of a furnished residence. At the end of his official labors he is generally rewarded by a peerage and a pension. Until 1853 business could not be transacted in his absence; but in August of that year it was resolved that, during his unavoidable absence, the chairman of committees of the whole house should preside in his stead. The present speaker is the Right Hon. John Evelyn Denison. The other officers, beside the speaker, are the chief clerk, the chaplain, the sergeant-at-arms, &c.; altogether 22. The sittings of the house of commons take place, since 1852, in a chamber built expressly for it, not far from the north end of Westminster palace. Forty members must be present to constitute a house, excepting when the commons are summoned by the sovereign or the royal commissioners to attend at the bar of the lords, which per se constitutes a house, whether 40 members be present or not. According to ancient practice the house always adjourns to 10 o'clock in the morning, and should the speaker take the chair (40 members being present) at any time between that hour and 4 P. M., the appointed proceedings may immediately commence; otherwise, no business can on that day be transacted, and the house will consequently adjourn to 10 o'clock A. M. on the following day. The present general practice is to commence business at 4 P. M., with the exception of Wednesdays, when the house sits from 12 to 6. The house does not usually sit on Saturday. Be-

ıe chair is a gallery appropriated to re-
; the side galleries and the body of
ıse are exclusively for members; and
ıngers' gallery is placed at the lower end,
e the chair. From the time of Queen
ıntil 1858, the qualification for election
ıouse was, for a county member, the pos-
of a landed estate, or of securities in the
kingdom, worth £600 per annum; and
ıorough member, the similar possession
0 per annum; but on April 28, 1858,
rby's government introduced a bill
ı this qualification, which was passed
:t Aug. 1. (See PARLIAMENT.)

JNE, a territorial and administrative
ı oı France. Communes were originally
which obtained enfranchisement by revolt
ıudal lords. In the struggle between
y and royalty in the 11th and 12th cen-
the kings often favored the emancipation
ommunes, which therefore became allies
ıonarchy against the nobles. The oldest
ne was that of Mans, formed by revolt
'illiam the Conqueror in 1067. Under
rotection many communes attained great
ınce early in the 14th century, but the
ıeing then sufficiently powerful to dis-
rith them, their number was diminished,
ir privileges were hardly recognized after
of Henry IV., till they were reorgan-
ıaw in 1791. There are now 37,040 com-
with a population of about 36,000,000,
ı little less than 1,000 inhabitants in
ıune. The commune is governed by a
adjuncts, and a municipal council. Ac-
to the law of 1855 the former officers
ıointed for 5 years by the emperor in all
nes containing or exceeding 3,000 inhabi-
'hile in smaller communes the appoint-
roceeds from the prefect of the depart-
'ho may also suspend the municipal coun-
but only for one year, the emperor alone
the right to dismiss them.

MUNE DE PARIS, the name of a revo-
ry committee which played a most impor-
rt in France, from July 14, 1789, to July
4. On the first insurrection the Parisian
ı convened, and under the above name
:ed a standing committee, which, on the
the taking of the Bastile (July 13, 1789),
hed the Parisian militia or national
whose command was intrusted on the
ɔ Lafayette, while Bailly was elected
of Paris. After various unsuccessful
:s at organization, a decree of the con-
; assembly (May 21, 1791) divided the
nalty of Paris into 48 sections, electing a
and 16 administrators, to which a muni-
ıuncil of 32 members and another board
ıotables were added, the whole to con-
the general council; an attorney of the
ne and 2 assistant attorneys were also
ed, and invested with considerable pow-
'n Nov. 10, 1791, Pétion was elected
Robespierre, Billaud-Varennes, and Tal-
tered the general council, while Manuel held the office of attorney, and had Danton as his first assistant. Henceforth the commune acted in concert with the Jacobins; but as there were still some members in favor of moderation, the majority, on the night of Aug. 10, 1792, established themselves as the insurrectionary commune, declaring all other authorities suspended, and succeeded in obtaining the sanction of the legislative assembly. They soon became the ruling power, and spread terror among the royalists by the dreadful slaughters of September. When the members of the commune met, after apparently leaning for a while toward a more moderate course, they joined the Montagnards, and organized the insurrectionary movements which resulted in the fall of the Girondists, May 31 and June 2, 1793. They pursued the same policy during the reign of terror, and remained faithful adherents of Robespierre until his overthrow. But their terrible prestige now began to vanish, and finally their very name was suppressed by the constitution of the year III., establishing a new municipal organization. From being a powerful unit, the administration of the city of Paris was divided into 12 distinct municipalities, and entirely lost its political importance.

COMMUNEROS, a secret political society of Spain, which originated in the early part of this century, was at first constituted as an offshoot of the freemasons, but subsequently advocated violent reforms in politics, while the freemasons were conservative. The communeros aimed at pure democracy, their watchwords being liberty and equality. They constituted themselves into a *quasi* military order, and preserved the formulary of knighthood in admitting their members, who were sworn to defend "the right of self-government in the people, and to accept but never to seek directions for the general good." In 1823 their number amounted to perhaps 70,000, and they had affiliated societies throughout the kingdom; but after the reaction of that year they were suppressed, and the members subjected to pains and penalties.

COMMUNISM. See SOCIALISM.

COMNENUS, a Byzantine family, of Italian origin, the members of which played a prominent part in the history of the eastern empire from the 11th to the 15th century. To this family belonged 6 emperors of the East, viz.: Isaac I., Alexis I., John II., Manuel I., Alexis II., and Andronicus I. In 1204 one of its members conquered Trebizond and a portion of Asia Minor, and founded the empire of Trebizond, which continued in the hands of his descendants until its extinction by the Turks in 1462. Other members of this family were noted as statesmen, generals, and authors.

COMO, a province of the Austrian crownland of Lombardy, area 1,090 sq. m., pop. 428,200, divided into 26 districts and 528 communes, bounded N. by Switzerland, S. by the province of Milan, E. by Bergamo and Sondrio, and W. by Sardinia, produces corn, wine, fruit, and silk, rears horses, mules, and cattle, contains mines of lead, iron, and copper, and quarries of white marble, possesses manufactories of cloth and woollen and silk goods, of firearms, of paper, soap, candles, &c. The people are industrious, and there is at least one elementary school in each commune. Famous in ancient times as lapidaries and masons, many of the inhabitants still follow the same pursuits, and others travel about supporting themselves by the sale of barometers, looking-glasses, and kindred articles manufactured in Como. The province is traversed by two branches of the Rhætian Alps and other mountain ridges. It is dotted with lakes, and gives rise to several rivers, of which the Adda and Ticino are the most important.—The capital, of the same name, situated on the lake of Como, pop. about 20,000, is connected by steamboat with Camerlata, which is at a distance of about 2 m., and thence by railway with Milan; distance by rail from the latter city, 27½ m. It has many suburbs along the lake, of which the most extensive are Vico on the W., abounding with villas, of which the villa Raimondi or Odescalchi is the most splendid, and St. Agostino, the manufacturing suburb. It is the see of a bishop, and has a splendid marble cathedral, begun in 1396, a remarkable church of still greater antiquity dedicated to St. Fedele, and a magnificent theatre built in 1813. There are several institutions of charity and learning, including 3 gymnasia, and a fine lyceum with a library of 15,000 volumes and a reading room. On a hill south of the city is the lofty tower of the Baradello. Here Napoleone della Torre, having been taken prisoner by his rival Ottone Visconti, Jan. 21, 1277, was shut up in an iron cage, in which he died by his own hands after 19 months of painful confinement. Pliny, the eminent philosopher Volta (a square, adorned with his statue by Marchesi, bears his name), Piazzi the astronomer, Innocent XI., and Clement XIII. were natives of this town. In former times the silk trade of Como vied with that of Lyons; it still has some large silk twist, also woollen factories, and a flourishing trade. After the revolution of February, 1848, the people of Como were among the first to shake off the yoke of the Austrians, and drove their troops from the city.—The Lake of Como (It. *Lago di Como;* anc. *Lacus Larius*) is a picturesque and tortuous sheet of water, full of promontories, gulfs, and little bays. At its northern extremity a narrow channel unites it with a kind of distinct lake, called Laghetto. Thence it extends nearly due south for about 15 m., and at Bellagio divides into two branches. The W. branch retains the name of Como, and is 18 m. long. The other is named Lago di Lecco, from the town of that name; its length is about 12 m. The river Adda, which enters the lake at its junction with the Laghetto, leaves it at Lecco. The width of the main lake in most places is not more than 1 or 2 m., but just above the separation of the two branches it is 3 m. across. A mild and genial climate, a fertile soil, profusion of fruits and vegetables, and prosperous villages scattered over the country, combine to render its banks one of the most delightful regions of Italy. Among the handsome mansions which line the shores are the villa Melzi, the villa Ciani, formerly d'Este, long the residence of Queen Caroline, the villa Carlotta, formerly Sommariva, which contains a fine museum, and the villa called Pliniana, on account of the intermittent spring described by the elder Pliny (ii. 103), as well as by the younger (iv. 30), and still exhibiting the same phenomena.

COMONFORT, Ignacio, president of Mexico from 1855 to 1858, born in the city of Puebla, March 12, 1812, entered the Jesuit college of his native town in 1826, became a captain of cavalry in 1832, and espousing the cause of the liberal party, took a part in the various battles which were fought during the revolution of that year. In 1834 he was made prefect and military governor of the district of Tlapa; in 1842 he was elected member of the national congress, but this congress was soon dissolved by Santa Anna, and Comonfort resumed his functions in Tlapa, displaying great energy in repelling the aggressions of hostile Indians. In 1846 he was reëlected to congress, but this congress was again dissolved by Gen. Paredes, and the exasperated liberals instigated the revolution of Aug. 1846, in which Comonfort took a conspicuous part. Appointed 3d alcalde of the capital, and afterward prefect of western Mexico, he relinquished these positions to engage in the war with the United States; and on Santa Anna's dissolving the army and leaving the capital open for the Americans, Comonfort commenced organizing guerrillas in the west with a view of entering upon another campaign, when he was summoned to the congress of Querétaro, where a treaty of peace was concluded with the United States. He was now chosen senator by his native state, and served in this capacity until 1851.. In 1852-'53 he was the representative in congress of the newly created state of Guerrero, and acted as custom-house director of Acapulco and other places until Santa Anna's return to power, when he was dismissed from office. He now joined Alvarez, raised the standard of rebellion, proclaimed the plan of Ayutla, March 11, 1854, and compelled Santa Anna, who endeavored to seize that town, to retreat. Repairing for a short time to New York, where he raised funds to carry on the war, Comonfort on his return took a prominent part in the campaign, at the end of which, in 1855, Santa Anna was finally compelled to abdicate. Alvarez assumed the supreme government, but this veteran guerrilla general, weary of political cares, returned shortly afterward to his mountain home in the south, delegating his authority to Comonfort, who became provisional president of Mexico, Dec. 11, 1855. He soon met, however, with the most strenuous opposition on the part of the clergy, the army, and the large body of the conservative party. The junta of Zacapoastla declared itself on Dec. 19 against the president, and a little later the seat of revolution was transferred to the city of

Over 5,000 men assembled there in
3. Gen. Comonfort marched against
he head of 12,000 national guards, and
the army which had remained faith-
d the rebels to surrender on March 20,
d on March 31 a decree ordering the
n of the property of the church,
s followed on June 28 by another de-
ng the clergy to hold landed estate.
time he sent a Mexican envoy to
ttle with the holy see the questions
y these measures; but the Mexican
de all possible effort to prevent his re-
while at home they labored to under-
government. Revolts broke out in
n Oct. 1856, and afterward in San
other places; but although they were
quelled, the country remained in a
l condition. Congress, which was
y the president, Feb. 5, 1857, assem-
r very inauspicious circumstances. It
, however, to draw up a new consti-
hich was promulgated March 11. This
vested the legislative power and the
ver religious and military affairs ex-
in congress. The president, finding it
e to meet the difficulties which agi-
country under such restrictions, was
y constrained, in Oct. 1857, to apply
rdinary powers. These were granted
ss on Nov. 4, and he was proclaimed
onal president on Dec. 1. His posi-
ever, became more and more critical.
by the clergy and the army, he found
solated, and could only depend upon
de of Gen. Zuloaga, which was attach-
m personally. By a pronunciamento
a Dec. 17, this brigade, too, declared
the new constitution, but appoint-
rt chief of a new government. By
ronunciamiento, however, of Jan. 11,
y discarded him altogether, and the
ion which broke out on that day in the
d to a bloody struggle of several days.
ng Juarez, president of the supreme
rovisional president, Gen. Comonfort
d to regain his authority by force of
t in vain. On the morning of Jan. 21
al was in the hands of the rebels. The
representatives, convoked on the same
Gen. Zuloaga, appointed that general
l president, while Juarez convened a
at Guanajuato, to guard the rights of
rt. The latter in the mean time, de-
his soldiers, and unable any longer to
is unfortunate country, took his depart-
Mexico in Feb. 1858, and repaired to
States.

IN, Cape. See Cape Comorin.

RN, or Komorn (Magyar, *Komárom*),
in the administrative division of Pres-
Hungary, divided into 2 parts by the
noted for its abundant produce of
ne, cattle, and wool, also for its marble
fisheries, and coal mines; area, 1,127
op. about 150,000, of whom 6,100 are Germans, 5,680 Slovaks, 5,000 Jews, and the rest Magyars. There are about 60,000 Protestants, a small number of members of the Greek church, but the majority profess the faith of Rome.—The capital, of the same name, pop. about 20,000, is an imperial-royal free town, situated at the eastern extremity of the fertile island of Schütt, at the junction of the Danube and the Waag, in lat. 47° 45′ N., long. 18° 8′ E., contains 4 Roman Catholic and 2 Protestant churches, a Greek church, a synagogue, and several learned and charitable institutions. The celebrated fortress of Comorn, defended by extensive works, on both banks of the Danube, was founded by Matthias Corvinus in the second half of the 15th century, and has been rendered one of the strongest places in the world by the additional fortifications erected since 1805. Its impregnability was tested in the revolution of 1848 and 1849, when it withstood a long siege and bombardment, under Mack, Guyon, and Klapka, and finally came into the possession of the Austrians by a voluntary capitulation (Sept. 27, 1849).

COMORO ISLES, or **Comoros**, a group of high volcanic islands in the Mozambique channel, between Africa and the N. W. coast of Madagascar, consisting of the islands of Angaziya or Great Comoro, Anzooan or Johanna, Mayotta, and Mohilla, lying between lat. 11° and 13° S., long. 43° and 45° 30′ E.; pop. estimated at 80,000. They are fertile in most of the productions of the tropics. The rivers abound in fish, and vast herds of cattle range the meadows. Cocoanut oil and tortoise shell are the chief exports. The inhabitants are Arabs and negroes, who generally profess Mohammedanism, but fetichism is practised to some extent. The Comoros are governed by sultans, one of whom resides in nearly every town. The island of Mayotta was ceded to France in 1841, and the cession was confirmed in 1845. Comoro, the largest island, is 30 m. long and 12 m. broad. It has a large town on the E. side, but is seldom visited by Europeans, and contains no spring water. The drink of the inhabitants is the milk of the cocoanut.

COMPANY, in military affairs, a subdivision of a regiment of infantry or artillery, usually consisting of from 60 to 120 men, and commanded by a captain, who has under his orders lieutenants, sergeants, and corporals.

COMPARATIVE ANATOMY, the science which treats of the structure and relations of organs in the various branches of the animal kingdom, without a knowledge of which it is impossible to understand the beautifully progressive development of organization; necessary even for the full comprehension of the uses of many parts of the human body, which, apparently rudimentary and useless in man, are highly developed in other animals. This science is also the basis of physiology and the natural classification of animals. On a subject so vast as this, comprehending the whole range of animal life, it will be impossible here to give any thing but a sketch; selecting a few only of the more important functions, instead of attemping an exhaustive treatment of the science. In order to simplify the subject, and to make this article especially referable to human anatomy, the whole division of the invertebrata will be left out, for consideration under its separate branches and classes.—In the vertebrata, the most striking character is the great preponderance of the nervous system, which impresses peculiar forms on the skeleton, and corresponding arrangements on the vital organs; every thing in their structure seems destined for the protection and suitable exercise of the nervous system; this is less observable in the lower forms, but in all, the nervous centres are largely increased and collected together, compared with the invertebrata, and the principal portions enclosed in the bony canal of the spine and skull, to which the limbs with their muscles are attached; their bony fabric, therefore, is properly called neuroskeleton, to distinguish it from the external or dermoskeleton of invertebrates, the former having a basis of phosphate of lime, the latter chiefly of carbonate of lime. In the lowest vertebrates, as in eels among fishes, and serpents among reptiles, the spinal column and its cranial continuation constitute the principal and essential parts of the skeleton, the development of limbs being secondary; the skull is composed of the same elements as the spine, enclosing the cephalic ganglia and protecting the organs of special sense. The vertebral column is the first rudiment of the skeleton in the human embryo. The bones of fishes are comparatively soft, flexible, and elastic, in the lowest species without division into vertebræ, and in the sharks and rays cartilaginous, resembling the embryonic conditions of higher animals. Having no weight to support from the density of the medium in which they live, and being forced only to propel themselves through the water, which is effected by the lateral movements of the spine, the vertebræ are very numerous, and united by biconcave surfaces enclosing a gelatinous substance which admits of easy motion of one bone on another when the vertically flattened tail strikes the water; in aquatic mammals, as the whales, the tail is flattened horizontally to enable them to rise to the surface to breathe air, which distinguishes them from fishes; the number varies from 25 in *uranoscopus* to more than 200 in sharks, and some are said to have only 13. The lateral surface of the fish is extended by large spinous processes and fin-rays on the back, on what may be called the dorsal or abdominal vertebræ, and to these are attached also the ribs when any are present; those which have spines below are called caudal vertebræ, the last being triangular and flattened to support the fin-rays of the tail; the dorsal and abdominal fins move only with the spine; though requiring no chest for respiratory organs, many fishes have ribs, and a few a rudimentary sternum. The cranium in the cartilaginous fishes is very simple, but in the osseous tribes is composed of a great number of pieces whose homologies are not always well determined; the brain cavity forms but a small part of the head, and its component bones are easily recognized as direct continuations of the vertebræ; the bones are thin and united by squamous sutures, which favors extension during growth; the lower jaw and operculum are supported on each side by a series of bones resembling the os quadratum of birds; the hyoid bone is greatly developed, supporting the branchial arches and organs of respiration. The pectoral fins represent the anterior extremities and the ventrals the posterior; the latter are frequently absent; the former are attached to an osseous scapular arch, articulated to the skull: to this are attached an arm, forearm, and numerous carpal or wrist bones, from which the fin-rays or fingers spring; the arm remains within the body, only the hand being external, consisting of a large number of fingers with many joints; no animal above fishes has more than 5 fingers, and some have only one (the middle finger), as the horse. The pectorals of the skates are wing-like, surrounding and even projecting in advance of the head; in the flying fishes they are so long that they serve for a species of flight; they vary in position, being sometimes under the throat and sometimes behind the ventrals; in a few species they are wanting. The posterior limbs, or ventral fins, are not articulated to the spine and do not form a bony arch as in the shoulder, but are suspended to the rib-like iliac bones at a distance between the head and anus varying in different families; in the jugular and thoracic fishes the bones supporting the ventral fins are attached to the arch which sustains the pectorals; there are small bones between the pelvis and the fin-rays, which, if any, must represent the femur, tibia, fibula, and tarsus of the higher animals. A singular peculiarity in the skeleton of fishes is its want of symmetry in some genera; in the soles (*pleuronectes*) and flounders (*platessa*), one side is turned upward instead of the back, both eyes are placed on the same side, and the cranial bones are distorted to allow this arrangement of the organs. In most osseous fishes there are many small forked bones interspersed among the muscles, having no connection with the skeleton, serving as points of support to the muscles.—In the amphibia, which constitute a class of animals intermediate between fishes and true reptiles, there is an extraordinary difference of external form and internal structure during the metamorphosis which most of them undergo. In all, the spine consists of a dorsal, sacral, and caudal portion; in the frog there are only 8 or 9 vertebræ, in some of the salamanders more than 40, and in the siren 80 or 90; in the higher forms, the vertebræ have no ribs, but long transverse processes, and are united by a ball and socket joint with anterior concavity and posterior convexity; in the tadpole and perennibranchiate genera, the spine is like that of fishes; in the frog, destitute of a tail, there is no coccyx, but in the salamander the coccygeal vertebræ are as numerous as those of the trunk, forming a powerful swimming organ. The bones of the skull are less numerous and more united than those of fishes; the brain cavity is very small, and the facial bones much developed transversely; the os hyoides undergoes remarkable changes according to the persistence of the branchiæ, as detailed in the article AMPHIBIA; the tailed genera have cartilaginous appendages to the transverse processes, like rudimentary ribs. The scapular arch is well developed, consisting of the usual 3 bones, which unite to form the glenoid cavity, and in most genera has a distinct breast bone extending beyond the chest both anteriorly and posteriorly; the bones of the arm, forearm, and hand are easily recognized. The posterior extremities in the leaping batrachians consist of a long and cylindrical femur, a tibia and fibula consolidated into one bone, a tarsus and long metatarsus, and 5 toes; in the aquatic species the limbs are small and feeble, in some rudimentary, or even wanting, the powerful tail serving for rapid locomotion.—In serpents the skeleton is little more than a vertebral column and its ribs; there are no limbs (only the merest rudiments in some), and the motions of creeping, climbing, swimming, and springing are performed entirely by means of the flexible spine and the very numerous ribs; the number of the vertebræ is greater than in any other animals, being sometimes over 300, and their arrangement by ball and socket joints allows of very free lateral motion; the ribs, upon which they creep as upon so many feet, like an articulate, extend from the head to the anus, and are attached to no sternum; the bones of the head are very numerous, and movable upon each other; the brain cavity is small. Snakes may be distinguished from lizards without feet, by the separate movements of the two halves of the jaws, which allow the remarkable expansion of the mouth necessary to swallow their large prey. In lizards the skeleton is more perfect; in them is seen for the first time cervical vertebræ; they have also distinct dorsals, bearing ribs, lumbar, sacral, and caudal vertebræ, articulated by ball and socket joint; also a sternum, scapular and pelvic arch, with very distinct and normally divided limbs in most genera; they have what have been called cervical and abdominal ribs before and behind the true ribs, and the sternum is prolonged nearly to the pubis, giving origin to cartilaginous arches supporting the abdominal viscera, of which the homologues in man are the lineæ transversæ of the rectus abdominis muscles. In the flying dragon, a small lizard, the ribs are elongated and covered with a thin membrane, by means of which the animal sails, like the flying squirrel, from one point to another below, using this membranous expansion as a parachute. In the fossil pterodactyle, a flying lizard, there is a remarkable elongation of one of the anterior fingers, which supports a flying membrane similar to that of the bat. In the rhizodonts, including the crocodiles and the large extinct fossil genera, the skeleton is still further developed, approaching more nearly to the mammalian type, especially in the extremities. The bones of the cranium are firmly united to each other, and there is no lateral movement of the jaws, as in snakes; the brain cavity is small; the whole number of vertebræ is decidedly less, and locomotion is proportionally performed by the feet, though the tail in the aquatic genera is still largely developed and very muscular. In tortoises, the highest reptiles, it would be difficult at first sight to recognize the usual structure of the class, but a closer examination betrays no essential difference. The spine consists of 7 or 8 cervical vertebræ, 8 to 14 dorsals, 3 sacral, and 20 to 30 caudals; the broad flat bones under the scales are a series of ribs, as may be seen by examining their connection with the spine from the inside, and the lower cuirass or plastron is a series of sternal bones, in which the ends of the ribs unite; the aquatic species have these ribs united only in the portions nearest to the spine; this immovable box of ribs and sternum, overlaid with the scales of the dermoskeleton, is admirably adapted to resist pressure. The bones of the skull are firmly united, and form large cavities and fossæ for the protection of the muscles of the jaws; the brain cavity is still small. The anterior limbs are attached to the inside of the chest; the scapula below the viscera, and close to the plastron, is united to the collar bone by suture; the humerus is arched and twisted, the forearm short, broad, and permanently pronated, 3 rows of carpal bones, metacarpus, and phalanges. In the pelvic arch the ilium and the pubis seem to change places, the latter being broad and flat, and uniting below with the ischium, while the former is long and narrow, and projects backward, the whole pelvis being movable on the spine; the former presents a trochanter, and has quite a mammalian aspect; the bones of the leg are separate, and nearly equal; the aquatic species have longer and more slender limbs.—In birds the number of vertebræ is quite variable in the different regions of the spine; in the neck, according to Cuvier, from 23 in the swan to 9 in the sparrow; in the back, from 11 in the cassowary and swan to 6 in the bullfinch; in the sacrum, from 20 in the ostrich to 7 in the coot; in the tail, from 9 to 5; these proportions being connected with the habits of the species. Though so very different from the lower classes, birds differ from each other only slightly in their skeletons; the bones of the neck, back, chest, and extremities are remarkably similar in all; they vary chiefly in the shape and size of their bills, the form of the feet, and the proportions of their bodies. Their bones are white, compact, fragile, and hollow for the introduction of air. The cervical vertebræ are the most numerous; their bodies lock into each other so as to allow a forward motion in the upper and lower ones, and a backward motion in the middle ones; the transverse processes are long, and have rudimentary ribs, especially developed in birds of prey. The bodies of the dorsal vertebræ are short and compressed laterally, and have large transverse processes; they generally are immovable in birds of powerful flight. The sacral vertebræ are firmly united together, and with the pelvis, in order to give support to the superior parts of the body in flight, and a sufficient base for the lower extremities. The bones of the tail are broad and short, penetrated by the spinal cord except the last, which is compressed, supporting the tail feathers and an oil gland. The skull is united into a single box at an early period; the brain cavity is very much larger than in the reptiles and fishes, and is occupied fully by the nervous centre; the brain of a sparrow is 100 times greater than that of a large marine turtle, in proportion to the size of the animals. The most striking characteristic of the class of birds is that the anterior and posterior extremities are entirely dissimilar in appearance and function, though the anatomical structure of the wings and legs is the same. The perfect condition of the chest indicates the energy of the respiratory system, and the consequent muscular activity. The ribs are strong, attached to the sternum in front by bony continuations instead of elastic cartilages, movable only at each end, articulated to the sides of the vertebræ in the flyers, but to the intervertebral cartilages in the runners; in those which require great solidity of the chest for powerful flight, each rib is strengthened by bony splints running obliquely upward and backward to the succeeding bone, to which it is attached by strong ligaments. The sternum is provided with a keel or crest in front for the attachment of the muscles of the wings, large in proportion to the flying powers; in the ostrich, which does not use its wings to rise in the air, this bone is flat as in man; in some aquatic birds the breast bone contains several convolutions of the windpipe within its cavity. The shoulder blade is parallel to the spine, long and narrow, at the glenoid cavity articulating with the clavicles and coracoid bones. The coracoid bones, or posterior clavicles, are strong, extending from the glenoid cavity to a transverse groove in the anterior portion of the sternum; these are called the collar bones by some of the older authors. The true clavicles, the "merrythought" or "wish-bone" of the domestic circle, vary considerably in size, being sometimes quite rudimentary, and in other species strong arches reaching the sternum. The wing consists of a humerus, radius, and ulna, carpus and metacarpus of 2 bones each, a small single-jointed ulnar finger, a 2-jointed radial finger, and a rudimentary thumb. Prof. J. Wyman has shown in the *anas acuta*, or pintailed duck, an arrangement of the bones and ligaments by which all the segments of the extended wing are retained in a fixed position independently of muscular action, and the flexion or extension of the hand on the forearm when the latter is flexed or extended on the arm; during flexion and extension the radius advances and recedes upon the ulna, carrying with it the upper bone of the carpus, and with this last the hand; when the upper carpal bone, to which the lower is attached firmly, is drawn over the end of the ulna as the radius recedes, the lower is drawn up between the hand and the end of the ulna, maintaining the hand extended, like a wedge, until it is displaced by the reversed action of the radius. ("Proceedings of the Boston Society of Natural History," vol. v. p. 169.) In the lower extremity the iliac bones correspond to the shoulder, the thigh bone to the arm, the leg to the forearm, and the foot to the hand. Though one be covered with feathers and the other bare, the wings and legs present the same analogies that may be traced between the fore and hind legs in all the vertebrata. The anatomy of the feet of birds is interesting geologically, in connection with the fossil tracks of the Connecticut river valley. The tracks in the red sandstone of this locality are now known to consist partly of those of birds, which the researches of Dr. Deane and Prof. Hitchcock have proved existed on the earth in this remote epoch, long before the creation of man. (See Fossil Footprints.)—In the mammalia, or those animals bringing forth living young and nourishing them with milk, there is a great variety of form. Man, the horse, the whale, the seal, and the bat, notwithstanding their dissimilar external appearance, exhibit in their skeletons and internal structure homologies which show that they belong to the same class: the whale is nearer to man than to the fish, and the bat is more human than bird-like. The form of the skull varies much in mammals, according to the development of the brain cavity, and the proportions of the face. A direct relation is found to exist between the size of the cranium and face and the intelligence of an animal. In man the cranium, or brain cavity, is directly over the face; and in proportion as the former retreats behind the latter, and as the face is prolonged forward, the animal propensities preponderate over the intelligence. The differences between human crania in this respect early attracted the attention of anatomists, and Camper measured them by what is called the facial angle; this is formed between a line drawn horizontally from the opening of the ear to the upper teeth, and a line drawn vertically from the forehead to the same incisors. In the white races this angle is from 85° to 90°, thence decreasing in the other races as low as 65°. In some of the antique statues this angle is made 90° and in one case 100°, which last never existed unless in disease. In children the forehead is more prominent than in adults, and their facial angle is usually 90°; this explains their generally pleasing countenances as well as the diminution of their innocent beauty as age advances. Those animals which have the lowest heads and the longest snouts are always considered the most stupid and gluttonous, as the hog among quadrupeds; as we descend to reptiles and fishes, it has been seen that the jaws constitute almost all the head, and these are known to be the most voracious of creatures, apparently living only to eat; on the contrary, a great degree of intelligence is attributed to the elephant from his well-marked forehead, and the perpendicular visaged owl is made the companion of the goddess of wisdom; though in the last instance these semblances do not depend on any greater development of brain, but are mere bony expansions. Even among men, we instinctively regard him as stupid and sensual whose face is very prominent and whose forehead is receding; the advancement of the forehead toward the line of the face is always understood by artists as representing a noble and elevated character. As we recede from man the brain cavity diminishes, the jaws and nasal fossæ are lengthened, the orbits are directed more externally and are less distinct from the temporal fossæ; the occipital foramen and its two condyles gradually fall behind the middle of the base of the skull, and finally occupy its posterior face, so that the jaws, instead of being at right angles to the spine, become parallel to the axis of the body. The 8 cranial bones of man may be recognized in the mammal skull, though they are variously subdivided in the different families, and in some are united together; the two parietals are united in the carnivora, while the frontals remain separate, and the temporal tympanum is divided from the rest of the bone by a suture; in the elephant the frontals and parietals are early united with the other bones into a solid box. Though the skull of the highest apes resembles that of man in shape, the bones are differently connected; the wing of the sphenoid does not reach the parietal and barely touches the frontal, and the temporal suture is serrated rather than squamous. From the position of the occipital foramen it is evident that the head of mammals is not balanced on the spine, but is suspended from the neck and back by the ligamentum nuchæ. The bones of the face differ from the human in the greater number of pieces and in their horizontal extent. In man the upper jaw bones contain all the upper teeth; but in the lower animals the incisors are contained in an intermediate bone, the intermaxillary, a persistence of a separation which may be detected in the human fœtus. The palate bones are small in the carnivora, and large in the rodents; the upper jaw is elongated in all; the peculiarities of the bones forming the orbits will be given under the heads of the different families. No animal but man has a chin, and this even begins to decrease in the negro races; in all below him the anterior arch of the lower jaw is convex vertically and retreating at its lower margin; in the whale it resembles two immense ribs, united at the points, without any ascending branches, the articular surface being directed backward; in the hare and rabbit the coronoid process, to which the elevating muscles are attached, is small, but in the squirrel and rat it is large, and the condyle or articular process is compressed laterally and largest in front; in carnivora the condyle is transverse, and admits only of a hinge-like movement; in the ruminants the flat articular surface allows considerable lateral motion; in cetacea and edentata there is neither ascending ramus nor coronoid process, and the angle formed by the body and ramus is gradually reduced until it becomes on a line with the axis of the jaw; in carnivora, rodents, and ruminants, the two sides of the lower jaw are never firmly united at the symphysis. Many mammals have the head surmounted with horns; that of the rhinoceros belongs to the skin, and is only an assemblage of closely united hairs, but the horns of ruminants have a bony axis springing from the frontal bone. The bony prominence in the giraffe is covered by the skin permanently; in the stags the bony core is at first under the skin, but soon becomes exposed, and after a certain time falls off, to give place to another similar growth; in the ox, sheep, goat, and antelope, the osseous axis grows during life, and never falls, being covered by a sheath of horn, growing by layers; these bony cores generally communicate with the frontal sinuses, and thus receive air into their interior. The species with falling horns have generally only the males thus armed; the reindeer, however, is an exception. The comparative anatomy of the brain has been sufficiently given under the article Brain.—The vertebrate nervous system is not homologous with the invertebrate; the spinal cord of the former is enclosed in a vertebral canal, and its vesicular substance is continuous throughout, while the ganglionic chain of the latter is always in the general cavity with the viscera, forms a ring through which the œsophagus passes, and its vesicular substance is frequently interrupted. Though the vertebrate spinal cord cannot be considered as a chain of ganglia, it may be regarded as a series of segments arranged in a linear direction, having a distinct enlargement in many animals as the origin of the spinal nerves, and particularly of those sent to the extremities. The spinal cord of fishes terminates near the end of the spine. Owen says that in typical fishes it gradually tapers to a point in the heterocercal or unequal-tailed species, but swells again into a terminal ganglion in most equal-tailed species; in describing that of the angler (*lophius*), he has evidently fallen into an error in regard to its length, as shown by the researches of Prof. J. Wyman (see "Proceedings of the Boston Society of Natural History," vol. iv. pp. 150–'51); the latter found the cord extending as usual quite near to the tail, where it ended in a ganglion, presenting the striking peculiarity of being sheathed in a great part of its extent by an immense number of bundles of nervous fibres, of a vastly greater bulk than the cord they surrounded. Where the pectoral fins are much developed, as in the rays and flying fishes, the cord is enlarged at the origins of the nerves; in the torpedo and electrical eel nerves are freely distributed upon the thin membranous laminæ which constitute the electric apparatus, and act as conductors, if not as generators, of this force. The cord is composed of an external white or tubular portion, and an internal gray or vesicular matter, the reverse being the arrangement in the brain. In the *amphioxus*, the simplest vertebrate, the cord, with its nerves on each side, forms the whole nervous system; but in fishes generally the cerebral ganglia, with the nerves of special sense, constitute a distinct brain. The olfactory lobes, by some considered the representatives of the cerebral hemispheres in man, from which the nerves of smell arise, are well developed, and in the sharks are 4 instead of 2, the usual number. The optic lobes, behind these, homologous with the tubercula quadrigemina, are larger than the other parts of the brain, and are in proportion to the development of the optic nerves which arise from them and the perfection of the sense of sight. In the blind fish of the Mammoth cave of Kentucky (*amblyopsis spelæus*), in which the eyes are rudimentary, there appears to be an exception to this law; though he could detect no optic nerves, Prof. Wyman found the optic lobes of good size, though less than in the allied fishes. Between the olfactory and optic lobes are the true cerebral hemispheres, largest in the sharks; behind the optic lobes is the cerebellum, which comparative anatomy shows to preside over the coordination of the movements, largest in the active sharks. In the perennibranchiate amphibia the brain and nervous system are very much like those of fishes; in the genera which undergo metamorphosis the changes from the fish-like to the reptilian brain are rapid and remarkable, the hemispheres becoming enlarged and the spinal cord shorter as the tail disappears. In frogs, there are found attached to each spinal nerve, before the division into sensory and motor roots, vesicles containing a white, chalky, crystalline substance; from their constant presence, they are probably essential parts of the nervous system; nervous filaments have been traced into the interior of these vesicles; the chalky matter resembles that found in the vestibule of the ear. In true reptiles the brain is more developed and nearly fills the cranial cavity; the hemispheres are increased in size, and the cerebellum is large in proportion to the activity and complexity of the movements; the nerves are large compared with the centres, and the sympathetic system is more closely connected with the blood-vessels. In birds the parts of the brain are no longer on the same plane, are larger, more complicated, indicating more intelligence and more activity. In the spinal cord there is an enlargement where the nerves are given off to the wings, and another where those of the legs take their origin; that these are not proportional to muscular force, but rather to sensibility, is shown by the fact that the latter is the larger; though the wings are more muscular, they are, from their feather covering, less sensitive to external impressions than the legs; this is more clearly shown in the mammalian bat, where the enlargement corresponding to the exceedingly sensitive wings is by far the greatest. In mammals the cerebral and cerebellar hemispheres reach their highest development, the former gradually covering over the latter, and the convolutions becoming more numerous and complicated up to man; the commissures more intimately connect their different portions; the spinal cord is larger in proportion to the size of the body, but smaller when compared with the brain; and the sympathetic system is more extensively distributed.—By means of the organs of special sense, placed at the extremities of the cerebro-spinal nerves, and generally near the entrance of the alimentary canal, animals are brought into relation with external objects; an impression communicated to the outer surface is transmitted to the sensorium along the sensory fibres of nerves, and then causes the phenomena of smell, vision, taste, hearing, or general sensation, with their resultant motor acts from the transmission of the nervous influence along the motor fibres; in all the vertebrates there are organs set apart for this purpose, the nose, the eyes, the ears, the tongue, and the skin. The sense of touch, residing in the skin, is the most universally diffused, and is capable of answering most practical purposes of the other special organs; and indeed the senses of taste and hearing seem to be little else than modifications of the sense of touch; the senses of smell and vision depend upon the influence of such delicate changes in the surrounding air that we can hardly comprehend them except through their effects. The skin consists essentially of 2 layers, the cuticle and the true skin; the surface of the latter is the seat of sensibility, and is provided with numerous papillæ into which the nervous loops enter; the cuticle is made up of nucleated cells, becoming dry externally, and falling off in the form of thin flakes. In fishes the body is generally covered with scales, not fit for receiving tactile impressions; some of the siluroids (as the horn-pout) have fleshy barbels attached to the lips, into which nervous filaments may be traced; their skin is lubricated with a viscid mucus poured out through numerous tubes. In the amphibia the skin is soft and yielding, and quite sensitive; it is well known to be in this class an important accessory organ of respiration. In serpents and lizards the tongue and the tail are the principal organs of touch. In birds the tactile organs are the bill, the cere, and various appendages in the shape of combs, wattles, bristly hairs, and caruncles: in the swimmers and waders the bills are very sensitive; in the snipe and woodcock, for example, the 5th pair of nerves is freely distributed to the long bill, making it an exceedingly delicate organ for the explorations necessary in their search for food. In mammals, most of which are covered with hair or thick hides, the sense of touch is most acute in the neighborhood of the mouth; the lips of the horse are very sensitive; those of the carnivora and rodents are provided with long whiskers, into which nerves enter, forming exquisite organs of touch; the omplicated appendages to the nose of bats, and lso their delicate wings, are very sensitive tacile organs. With the exception of the tongue, which is sensitive in all, there is no approach to he perfect development of touch in the human ject until we reach the quadrumana, in which hand is the chief tactile organ. The fore foot the ruminant, ending in a hoof, serves only support and locomotion; in the lion it is n addition prehensile, and to a certain extent le: in the monkey the palmar cuticle is thin ive, though the hand is still used in on; in man the sense of touch is very in the tips of the fingers, though all parts the skin are more or less sensitive. The sense f touch may be educated to a degree almost tutive for the sense of sight; what the wing is naturally, the blind man's fingers become by education. The sense of taste, in man, must be considered as principally dification of the sense of touch; as it is le to draw the line between the mucous brane and the skin, which are also composed the same elements, and as the sensory branches f the same 5th nerve are distributed to the face, ips, mouth, and tongue, it is naturally inferred hat a great part of what is called taste is really ouch, applied to a special locality for special urposes, as in the wing of the bat and the tips f the fingers; and some are of opinion that he sense of smell supplies all of taste which not derived from touch. The papillæ of the e are more highly developed than those of skin, and are scattered over its surface in ll parts likely to come in contact with matters a state of solution. The tongue of fishes can ly be an organ of taste, being of a hard connce, and frequently armed with teeth; their oracity and the element in which they live are lso against their possessing in the tongue any hing more than an organ of touch. In all the ertebrates the tongue answers for other puroses than that of taste; in the toad it is darted with great quickness and unerring aim against he insects upon which it feeds; in the chameeon it is capable of considerable protrusion, enged at the end, and covered with a glutinous cretion which entraps its insect prey when projected against them. In birds it is chiefly n organ of prehension, rarely possessing papilæ, and generally sheathed in front with horn; he tongue of the woodpecker is a kind of barbd spear, protruded by a muscle and long bony endon from the top of the head, for the transixion of grubs and insects. In mammals generally the tongue is only an organ of taste; but n the giraffe it forms a long flexible process, which can take up small bodies almost like a hand, and by which the leaves of high trees are stripped off into the mouth; the tongue of the nt-eater is covered with a viscid secretion, to which these insects adhere in great numbers; n the cats it is beset with strong spines for puroses of prehension and of tearing the small ibres of the flesh on which they feed; in man, t is also of the first importance in the articulation of words.—The sense of smell doubtless exists in many invertebrates, at the entrance of the respiratory passages. In fishes the organ of smell consists of a sac containing a folded membrane largely supplied with nerves, and not communicating with the mouth or pharynx; that this sense is acute in the cod and other deep swimmers is probable from the fact, well known to fishermen, that these may be attracted from great distances by peculiar kinds of bait, while the top-water and mid-water species select their food by the sight, also often showing what seems to be a decided sense of taste; the sharks, from their large olfactory nervous centres, are believed to have an acute sense of smell. In the higher amphibia the nostrils become reptilian, being partly osseous and opening into the anterior part of the mouth; in saurians and chelonians the nostrils open posteriorly into the pharynx. In birds the external nostrils vary much in size, shape, and situation, but are generally freely open; their sense of smell is not so acute as has been supposed from some of the habits of the vultures, as Audubon has satisfactorily shown that these birds detect their carrion prey from great heights rather by the sense of sight than that of smell. In mammals the olfactory lobes are much more fully developed than in man, as also are the nasal cavities in which the sensitive membrane is spread out, and the external nose; the nostrils are valvular in the cetaceans, beavers, seals, &c.; in the hog the nose is enlarged into a gristly ring, in the tapir into a short proboscis, and in the elephant into a long prehensile trunk. The sense of smell is most acute in the carnivora and ruminants, as would be expected from the extent and convolutions of the turbinated bones; in the new-born child this sense preponderates over all others. From the communication of the nose with the pharynx, mammals are able to breathe with the mouth shut.—An organ of hearing may be detected in many invertebrates, as in the lobster, insects, and cephalopods. The simplest form in the vertebrates is in fishes, where it is a sac filled with fluid, in which are distributed the nervous filaments on small particles of calcareous matter; in connection with this sac are 2 or 3 semicircular canals opening into its cavity; the auditory nerve arises from the side of the spinal bulb, without any distinct ganglion; in such an ear as this the vibrations of the water are communicated to the skin, then to the fluid, and finally to the nerves. Sonorous impressions are conveyed with greater intensity in fluids than in air, so that the sense of hearing in fishes may be tolerably acute. In the sharks the semicircular canals are quite large, and the vestibule of the *carcharias obscurus* would contain the whole internal human ear; of course in such an organ there is no tympanic cavity, and no external ear. In the aquatic amphibia the organ of hearing is like that of fishes; but in the frog and salamander there is a membrane of the tympanum. In the reptiles there is added a cochlea with its own nervous filaments, the tympanic cavity is larger, and a bone, the *columella*, makes a communication between the vibrating membrane and the fluid of the auditory sac; an Eustachian tube communicates also with the throat, and the tympanum is either bare, on the level of the skin, or just underneath it. In birds there is no external cartilaginous auricle, as in mammals, and only a portion of the external auditory canal; but in many, especially in the rapacious families, the feathers are erectile around the meatus, and arranged to catch distant sounds; the bone-surrounded tympanum has also its columella, and its cavity communicates with the fauces by an Eustachian tube, and with the air cells of the skull; the cochlea is more developed than in reptiles, but, like the rest of the internal ear, does not reach the perfection of the mammalian type. In the owl there is a crescentic valvular fold of integument around the external ear. In mammals there is a perfect cochlea, a chain of 4 tympanic bones, an external canal, and an external movable ear; in cetaceans and other aquatic families, the external ear is either wanting, very small, or provided with a valve; in ruminants and the timid rodents it is large and directed backward; in the carnivora it is small and inclined forward. The use of the external ear in man is not exactly determined; its small size and direction would make it of but little use in collecting sounds and transmitting them to the tympanum. The experiments of Savart go to show that it acts not only in reflecting sounds, but as a conductor, by virtue of the elasticity of its cartilage. In general the ear of mammals resembles that of man. In all animals living in air the vibrations of sonorous bodies are transmitted to a tense membrane, the *tympanum* or drum; the tympanic vibrations are transmitted to the fluid of the internal ear, in which the nerve floats, by the chain of bones; and in order that the membrane may vibrate freely, the cavity of the tympanum communicates with the throat, the tension being equal on both sides.—The most complicated of the organs of special sense is the eye. In all vertebrates the eyes are two in number, and with few exceptions symmetrically arranged on the sides of the head; they are essentially on the same general plan, the differences being chiefly in relation to the density of the medium in which the animals reside. Aquatic animals, whether fish, reptiles, birds, or mammals, have the lens nearly spherical to compensate for the similarity of the densities of the humors of the eye and the surrounding water. In fishes the eyes are generally large and on the sides of the head, though they are small in the eel, directed upward in *uranoscopus*, and both on one side in the flounder; the cornea flattened, the sclerotic thick and sometimes partly ossified, the pupil large and round, the lids rudimentary, and the lachrymal gland wanting. The blind fish (*amblyopsis*) has been found to possess a sclerotic and choroid coat, a layer of cells beneath the latter resembling a retina, a rudimentary lens, and a nerve: still there is no trace of eye-dots on the skin, though such were found in the mass of areolar tissue occupying the usual situation of the orbit; such an eye cannot be regarded as an organ of vision, as the skin and tissues beneath prevent the passage of light except in a very faint degree: but such as it is, it corresponds to the vertebrate, and not to the invertebrate eye, with the last of which it has been sometimes compared: the deficiency of vision in this species is made up by the largely developed organ of hearing, and by the remarkably sensitive papillæ on the head supplied by the 5th pair of nerves. In the aquatic amphibia the eyes are like those of fishes; in the higher genera, and in reptiles, except ophidians, there are lids moving vertically, a lachrymal apparatus, and a movable iris; in the snakes there are no lids, but the skin passes directly over the cornea, as in the eel. In birds the eyes are always well developed; from the anterior convexity and lateral location, their sphere of vision is very extensive; the retina is quite thick, and apparently gives origin to a fan-shaped dark membrane, the *pecten plicatum*, which extends from the entrance of the optic nerve toward the lens; from its being composed chiefly of vessels, some think it a process of the choroid, and accordingly its use may be either to absorb superabundant rays of light, to extend the visual surface, or perhaps, as Owen has suggested, to push forward the lens by its erectile property. The pupil is round, the iris very contractile, the cornea large and transparent, and the sclerotic strengthened in front by a series of bony plates; there are 2 horizontal lids, the lower largest and most movable, and a third vertical nictitating membrane, semi-transparent, which may be drawn over the cornea from the internal angle: lachrymal glands are also present. There is some apparatus in the eyes of birds, either the *pecten* or the muscles, by which these organs can adapt themselves to the very different distances at which it is necessary for them to have distinct sight, by which the curvature of the cornea and the focus of vision may be changed. In mammals which seek their food by sight, the eyes, like the ears, are proportionally larger than in the day feeders, and their pupil, when contracted, assumes the form of a vertical slit instead of a circular aperture; in the moles and subterranean species the eyes are extremely small, and sometimes quite rudimentary: in the aquatic genera the lens is more spherical, as in fishes, and in cetacea the lids are imperfectly developed and the whole organ comparatively small; in carnivora especially there is at the bottom of the eye a brilliant *tapetum*, which shines at night with metallic reflections; the lids are generally formed as in man, the upper being the largest and the most movable; except in man and monkeys, there is usually a third nictitating membrane. The direction of the eye in man and monkeys is forward; but as we descend in the scale they become lateral, so that

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ere of vision becomes entirely different
eve.—There is no organ so characteris-
animal, as distinguished from the
, an internal digestive cavity for
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uced into the simple stomach, and dis-
ithout any mechanical division; in the
as there is a complicated apparatus
, and the digestive cavity is arranged in
ng manner; in the higher invertebrates
vertebrates there is a distinct mouth,
for mastication, a stomach for di-
an intestine from which the nutri-
ters are absorbed and the useless mate-
expelled. Accessory salivary, biliary,
creatic organs are found from the high-
ates up to man; in vertebrates the
e confined to the cavity of the mouth,
erally to the jaws, none being found in
mach. Fish are very voracious, and
them live upon animal food, swallow-
out choice whatever small prey they
in; a few have no teeth, but they are
well provided with them, the sharks
several rows; the teeth are found not
the jaws, but on the palate and vomer,
e, the branchial arches, and pharyn-
s; they are numerous, without roots,
the bone which supports them, decid-
l replaced by others growing under or
e of the old ones, and thinly covered
l; the form is generally conical, as
only to retain or tear their food,
crush and grind it; they are numerous
in the pike and salmon, serrated in
ks, flat and pavement-like in the rays,
in the wolf-fish, in others soft and
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the shark, but it is more commonly
of tubes or cæcal appendages, the
form of a gland, placed around the
; digestion is rapidly performed, and
the chyle is taken up by numerous lacteals which end in the venous system near the heart. The spleen is small, of various forms, attached to the stomach, generally simple, but lobulated in the sharks. The amphibia resemble fishes in their digestive apparatus, in their prehensile teeth in the palate and jaws, in the absence or rudimentary condition of the salivary glands, in the short and wide gullet, narrow stomach, and short and simple intestine; in some of the higher forms they approach the reptiles, in the less numerous teeth, elongated tongue, and distinct small and large intestine. In snakes and saurians, mostly carnivorous, the intestinal canal is shorter than in the herbivorous testudinata. In serpents, which feed on living prey, the sharp conical teeth are directed backward, and the bones to which they are attached are freely movable, enabling them to swallow animals considerably larger than themselves; the venomous genera have in front of the teeth of the upper jaw 2 curved long fangs, communicating by a canal or a groove with the poison gland behind and below the orbit; the muscles which close the jaws press the venom into the wound made by the teeth; in the rattlesnake these fangs are movable, and may be bent backward in a fold of the gum when not in use; behind the ones actually employed, there are the rudiments of others which soon complete the terrible armature if one fang happens to get broken. The tongue is long, sheathed, and bifurcated; salivary glands are present; the gullet is long and very extensible; the stomach capacious, simple, and capable of great distention, separated from the intestine by a distinct valve; the duodenum receives the biliary and pancreatic secretions, and begins to present a villous surface; the large intestine is distinguishable from the small by its size, and ends in the cloaca with the ureters and genital openings; the liver, spleen, and pancreas are elongated to conform to the shape of the body. In the carnivorous saurians the arrangement is equally simple, though the teeth are fewer, chiefly in the jaws, the stomach short and rounder; in the iguana and other vegetable-feeders, the intestine is the longest. In testudinata, instead of teeth the jaws are armed with sharp edges of horn; the tongue and gullet are provided with long papillæ, sharp in the marine species; the salivary glands are tolerably developed; the gullet is long, wide, and muscular, and the stomach wide and fleshy; the intestine is about 6 times the length of the body, and the colon has a short, wide cæcum; the canal opens into a general cloaca. The food of birds is so various that their digestive apparatus would be expected to present considerable differences, and in no part is there greater variety than in the bill, which in most species is the principal organ of prehension, whether the food be seeds, insects, fish, or the flesh of animals. The bill furnishes to the zoologist as good characters for the classification of birds as do the teeth for that of mammals; its exterior and the

sharp edges are covered with solid horn, but it never has any true teeth, so that there is no proper mastication in this class; the birds of prey have the upper mandible short, strong, curved, and terminating in a sharp point, and in the falcons with a tooth-like process on each side, indicating by these characters the more or less carnivorous propensities of the genus; the tooth-billed hawks are the boldest, while the vultures, with their more elongated beaks, rarely attack living animals; in the parrots and granivorous birds, it is broad and powerful to break hard shells and seeds; in aquatic genera it is broad for obtaining worms and insects from water and mud; in insect-eaters it is long and slender, or short and broad, according as the prey is taken on the wing or not, as in the bee-eater in the first case, and the whippoorwill in the second; it is long and straight in the kingfisher and heron for seizing small fish or reptiles; in the pelican the under mandible is provided with a large pouch for holding fish, and in the hornbill the upper is surmounted by a large and hollow casque. As the food does not undergo mastication in the mouth, the salivary glands are small; the gullet is wide and muscular, and capable of great distention in birds of prey; at the lower part of the neck it communicates with a membranous pouch, called the crop, in which the food undergoes a softening preparatory to stomachal digestion; the crop is largest in the granivorous birds, but it is found in the rapacious orders, though absent in the ostrich and the fish-eaters. Below this the gullet becomes smaller, but shortly dilates again into a second digestive cavity, or *proventriculus*, whose internal surface is studded with numerous follicles, generally of small size, sometimes hardly perceptible, but large in birds which have no crop; it secretes a fluid analogous to the gastric juice. This second stomach opens into a third, the gizzard, where chymification is completed, of variable size and structure; in carnivorous birds the gizzard is thin and membranous, while in the granivorous it is thick and muscular for compressing and crushing their hard food, performing the office of teeth; the lining membrane assumes a hard cartilaginous character, just as the skin of the palm and heel of man does; when circumstances favor or require it, mucous membrane may thus change into skin, as far as its dense cuticular layer is concerned; the power of the gizzard in the ostrich is enormous, wearing down the hardest substances; in gallinaceous birds its grinding action is assisted by the swallowing of pebbles, which serve the purpose of the gastric teeth of crustaceans and other invertebrates; the food of a bird may be known by the simple inspection of its gizzard, so close is the relation between its muscular power and the substances to be reduced by it. The intestine is much shorter than in most mammals, and consists of small and large, the latter having 2 tubular appendages, or *cæca*, at its junction with the former; these cæca are very small in the birds of prey, and largest in the gallinaceous order; the rectum is dilated near the anus, forming a *cloaca*, in which the ureters, oviducts, and male genitals end. The liver is large, filling a considerable part of the thorax and abdomen, usually two-lobed, with a gall bladder and hepatic ducts; the pancreas is long and narrow, lodged in the first convolution of the small intestine; the spleen is small, variously shaped, and situated beneath the liver.—The teeth are most perfectly developed in mammals, in which they serve not only for mastication, but for defence, attack, and for locomotion. The structure of teeth presents 3 different substances: a central portion, forming the principal part of the bulk, characterized by minute canals radiating from the pulp cavity, the ivory or dentine; the enamel, investing the exterior and crown with a thin layer of extreme hardness; and the cementum, or *crusta petrosa*, covering the roots and sometimes around the crown with a thin lamina like bone. These 3 substances are well seen in the grinder of an elephant, in which the central part is made up of ivory, in a series of ridges covered with enamel, and this last, except on the surface, concealed by crusta petrosa; the hard enamel leaves a projecting grinding surface, while the other two substances are worn away. The teeth in vertebrates are shed at least once, and in some many times; those of fishes and reptiles are continually undergoing this process; in most fishes and snakes the teeth shed have between them others which remain attached to the jaw or the soft parts, until new ones are formed, to be shed in their turn; in some fishes, the crocodile, and most mammals, the new teeth are developed below the old, which they push out, after the roots are absorbed and the crown drops off; in the elephant and mastodon the new teeth are formed behind the old ones, gradually sliding forward as the latter are worn away. In man and in most mammals there are 3 kinds of teeth: the incisors, in front, with thin and cutting edges; the canines, conical, next to the incisors, 4 in number, in all animals except man longer than the other teeth, destined to tear and to cut; and the molars or grinders, with a wide and irregular surface, for crushing and bruising the food. These different kinds of teeth are arranged in mammals according to the nature of their intended nourishment; and a simple inspection of the dentition indicates the kind of food, the habits, and even the structure of most animals. In the carnivora, or flesh-eaters, the canines are long, and the molars are compressed and sharp-edged, shutting like the blades of scissors: in the insect-eaters the molars are beset with conical points, meeting accurately in each other's interstices; in the fruit-eaters the surface of the molars is provided with rounded tubercles; in those which feed on hard grain, the grinding surface is flat and rough like a millstone; in the gnawing animals the incisors are greatly developed, and the enamel

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, as the long incisors, or tusks,
mastodon and elephant; or as the single
of the narwhal, developed in the male,
on the left side, into a long spirally-
horn, that of the right side being rudi-
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one, in the upper jaw, the lower one
neither teeth nor plates; the upper inci-
wanting in ruminants, the lower in the
; the canines are absent in rodents, some
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into a wide, horny beak, flattened
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are largest in herbivora. The gullet is
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h the large from the small. In the rumi-
he stomach consists of 4 distinct cavities:
, or paunch, receives the crude, unmas-
food while the animal is grazing; this
s a large part of the abdomen, especial-
the left side; the 2d, or honeycomb, is
n the right of the gullet and in front of
nch, of which it seems a mere append-
s mucous membrane presents the poly-
ellular structure often noticed in tripe;
from its numerous folds, is called the
ies; and the 4th, at the right of the
abomasum or rennet bag; this secretes
ic juice, and is the proper digestive
The first 3 stomachs communicate di-
with the gullet, which opens almost equally into the 1st and 2d, and by a narrower canal into the 3d. It may appear strange that while the coarse food enters the 1st cavity, after it has been brought back to the mouth and masticated, it should enter the 3d; the experiments of Flourens show that this is the necessary result of the anatomical disposition of the parts, as follows: the unchewed food, when it arrives at the part of the gullet which is continued in the form of a tube, mechanically separates its borders and falls into the paunch; but when drinks or fine semi-fluid substances present themselves, the canal is not dilated, and they naturally pass chiefly into the 3d cavity; it is consequently the occlusion or dilatation of this canal which determines the entrance of the food into the 1st or 3d stomach, and it is the volume of the substances swallowed which opens or not this canal. The act of regurgitation from the paunch to the mouth is supposed by some to commence in the 2d cavity, which seizes a portion of the alimentary mass, compresses it into a rounded form, and forces it into the gullet, by whose vermicular contractions it reaches the mouth; others believe, with Flourens, that the 2 stomachs force the mass into the oesophageal canal, which detaches a portion and forces it upward. Of these cavities the 1st is by far the largest, and the 3d the smallest; in early life the 4th is the only one developed for the reception of milk. In the camel and dromedary, the paunch is fitted to receive large amounts of water in one of its compartments, the 1st answering to a paunch, and the 2d, the water cavity, to the honeycomb. As a general rule we find the stomach most complicated in herbivora, and the simplest in carnivora; yet there are many exceptions to this; for instance, in the horse, whose food differs but little from that of the ox, the stomach is simple; in some carnivorous cetaceans it is very complicated. The intestines are generally long, large, and sacculated in proportion to the vegetable nature of the food, but to this also there are remarkable exceptions; in frugivorous mice they are only 3 times the length of the body, while in the carnivorous seal they are 28 times, the anomaly being probably explicable by the greater development of the cæcum in the former. In the elephant the total length is about 60 feet, in the camel 130, in man from 25 to 30; the intestine is 10 times the length of the body in the horse, and 28 times in the sheep; in an ornithorhynchus 17½ inches long, the intestinal canal was 5¼ feet, ending in a cloaca as in birds. The liver is large in cetacea, smaller in herbivora, and least in carnivora. There seems to be no general law for the presence or absence of the gall bladder; it is said that all the mammalia in which it is absent, except the porpoise, are vegetable-feeders. The spleen, pancreas, peritoneum, and other appendages of the digestive cavity, are much like those of man, from which they differ principally in shape; the biliary and pancreatic fluids are received into the duodenum. Absorption is effected in the

lowest animals by simple membranous surfaces, without the aid of vessels or tubes; the latter are gradually added, and in man and the higher animals little cylindrical processes in immense numbers are developed in the intestinal mucous membrane, the *villi*, by which the nutrient materials are absorbed and conveyed into the circulation. In all vertebrates there are special vessels, the lacteals, in the coats of the intestine, for the absorption of chyle, which convey it to the thoracic duct, from which it is poured into the venous blood near the heart; in fishes they are destitute of complete valves, which exist in reptiles, and in both these classes their convoluted arrangement supplies the place of glands; the fluid contained is limpid in the fish, and milky in the reptile; in birds, glands appear in connection with the lymphatics, but not with the lacteals, and the valves are more numerous and distinct; in mammals the chyle assumes more of the characters of blood, the valves are increased in number, the glands are numerous in the mesentery, and the thoracic duct becomes a distinct vessel, occasionally double.—The skin of fishes is generally covered with scales, varying from rough grains to large flattened tubercles or thick plates, and thin lamellæ overlapping each other like the tiles on a roof; they are held by folds of the skin, very much like the nails, which they resemble except in being more calcareous. Carpenter considers the scales of fishes as developed in the dermis, and those of reptiles as mere epidermic appendages, like nails, hoofs, feathers, and hairs. They are ornamented with the most beautiful and varied colors, presenting all the metallic reflections. The most recent chemical researches have established that fish scales have the constitution and many of the peculiarities of structure and growth of bone; the arrangement of the lacunæ and their forms are of importance in studying the resemblances of allied fishes; they are composed chiefly of phosphate of lime, and contain a little magnesia and fluorine. The order of development of the scales in osseous fishes is not well ascertained; but in young gar-pikes (*lepisosteus*), according to Agassiz, a row of scales is first formed along the middle line of the body; as the age advances, other rows appear above and below the median line, and the scales are crowded together and of a rhomboidal form toward the tail; the same is true of the sturgeon and other ganoid fishes. From the study of fossil species, Agassiz was led to recognize and to classify fishes by the structure of the scales; he found that all living species resembling the ancient types had scales of a peculiar structure. A common scale is composed of successive layers of horny or bony matter, the oldest layer being the lowest; over this bony layer in fossil fishes is a covering of enamel-like substance, as hard as that of the teeth; by this character the affinities of many modern species have been determined. The sharks and rays have scales consisting only of enamel, forming rough points, known in the former as shagreen; these he called placoids. Finding singular coincidences between the structure of scales and the general form and internal organization, he united the sharks and rays into one order, characterized by a cartilaginous skeleton, by a separation of the vertebral column from any upper or lower appendages, by teeth without sockets, attached to the jaw by skin and movable, and by the gills being covered only by strips of skin, forming as many openings on the sides or under part of the head as there are gills. The fishes whose scales are covered by enamel he called ganoids, embracing among living species the sturgeon and the gar-pike of North America, and among fossils, some of the most remarkable forms, well described in the works of Hugh Miller; the scales in this order are extremely hard, and more or less smooth, and with the reptilian character of vertebræ united by ball and socket joint. These 2 orders were numerous at the remote geological epoch before reptiles were created, and consisted of many genera, with species of great size; the types of these ancient fishes are now reduced to a very few genera. These first created vertebrates he considers, in his "Essay on Classification," as classes of the animal kingdom distinct from fishes proper. In ordinary bony fishes he found 2 types of scales; in one they consisted of simple layers with regular outlines, and in the other the edges were serrated posteriorly, the serrations becoming more numerous and the surface more rough as the scales increased in size; the former he called cycloids, the latter ctenoids. Ctenoids have bony spines in the anterior portion of the dorsal fin, and serrations or spines in the opercular bones; this order includes the perch family, and others with spiny dorsals and rough scales; the flat fishes (*pleuronectes*), characterized by their want of symmetry on the 2 sides, are an exception in having rough scales with soft fin-rays. Cycloids, embracing fishes with smooth scales, like the cod, herring, trout, and eel, are the most numerous types in the present epoch; the rays are soft, and the bones of the head are smooth and simple; the mackerel has hard rays, and both serrated and smooth scales, and seems intermediate between cycloids and ctenoids. It appears, therefore, that this division into 4 orders according to scales is not perfect, and it is not now much insisted upon by its author, except for the first 2. So intimate is the relation between the scales of fishes and their general organization, that Agassiz was enabled to restore a fossil fish from isolated scales, as is shown in his work on "Fossil Fishes;" in like manner Cuvier repeatedly restored fossil genera of mammals, giving the entire skeleton and outline of the form, from single bones found in the gypsum near Paris. In testudinata, the corneous integument is applied directly to the bony box which encloses their soft parts; the epidermis is covered with large scales, adherent by all their lower surface, except in the species which produces the tortoise shell of commerce, in which they overlap each other; these plates grow by all their adherent surface and at their circumference, as indicated by the concentric lines of increase, and become larger in proportion to the body; on the neck, tail, and limbs the epidermis is like that of mammals, except in being thicker and rougher. The scales of other reptiles are implanted on the dermis, and vary from horny in most genera to bony in the crocodile; contiguous by the borders on the head, and generally imbricated on other parts of the body; of various shapes and sizes, and arranged in serpents in long bands, moved by muscles, serving the purpose of limbs by their contact with the ground at their free posterior edges; the epidermis covers even the scales, and at certain seasons of the year is shed; in serpents the change is so complete that the cast skin comes off in a single piece, including even the covering of the eyes; the coloring matter, often of the most brilliant hues, is placed immediately under the epidermis. In batrachians, the skin has no corneous appendage, except the nail-like processes of the limbs in a few species. The feathers of birds are analogous to the hairs of mammals, but more complicated in structure; they are believed to be not the simple product of a secretion, as is frequently maintained, but to be developed from bulbs formed from cells and supplied with vessels; when the feather is formed the vessels disappear, and it gradually becomes dry and dead from the summit to the base, and finally is not susceptible of further living changes, resembling in this respect the horns of the stags. Each principal feather may be moved by means of the greatly developed cutaneous muscles, which send slips to them. A feather usually presents at its lower extremity a corneous tube open at the end, continuous with the shaft, which is webbed on each side, with fringed barbules. According to F. Cuvier, the capsule which forms the feather grows during the whole development of the latter; the bulb, after it has fulfilled its office, forms in drying a series of membranous cones in the tube, generally called the pith. The new feather is at first covered by the investing capsule, which often extends several inches from the skin; it gradually becomes free, and the barbs, at first rolled up, spread laterally; the end of the tube is implanted lightly in the skin, and at every moulting season is displaced for a new feather; moulting takes place generally every year after the season of incubation, and sometimes twice a year, and is a period during which the bird loses its voice, and appears more or less unwell. Some feathers resemble the quills of the porcupine, as 4 or 5 of those in the wing of the cassowary; in the eagle the barbs are stiff and united by hooked barbules into a broad lamina for retaining better hold on the air; in the ostrich the plumes of the tail and wings are of great softness and lightness, and in the marabout the feathers resemble the softest down; in the turkey's breast they are transformed into bristly hairs, and in some cuckoos into corneous plates at the ends. It is unnecessary to more than allude to the magnificent and varied colors of these appendages, which are usually the finest in the males and in adults. In a few mammals the skin is naked, but in the greatest number it is protected by hairs, characteristic of this class. Hairs are produced, like feathers, from cutaneous follicles or capsules lined with a cell membrane, and containing at the bottom a conical bulb supplied with blood, the soft interior constituting the pulp. Various as are the forms of hairs, they consist essentiallly of an external corneous cortical substance, and a medullary matter in the interior; the quills of the porcupine are only magnified and modified hairs, their cortical substance being very dense, and the medullary matter a pithy aggregation of very large cells, without any evident fluid portion in the perfect quill; so in birds, the cortical substance is found alone in the quill, while the cellular pith is confined to the shaft; in some animals the cortical substance is strongly imbricated, and the medulla made up of rounded cells. Pigmentary matter is developed in the central portion. Hair is, therefore, the product of epidermic cells, developed in abundance in the follicles, and it grows by the addition of new matter at the base. Hairs may become spines, bristles, wool, or down, according to softness and fineness; their color varies much, though less than that of feathers, being generally some modification of white, black, reddish brown, or yellowish. Recent observations seem to connect the supra-renal capsules with the regulation of the amount of pigmentary matter in man and animals. Hairs, like feathers, are usually shed once a year, with or without change of color and character; in winter the fur is finer and thicker than in summer, being intermixed with more downy fibres. Hairs sometimes are so closely approximated as to form horns or solid plates; the horn on the nose of the rhinoceros is made up of firmly united hairs; the shields of the pangolins seem to be the product of hairs intimately consolidated, and the latter are seen projecting from the former in various parts of the body. The whiskers on the nose of carnivorous and rodent animals have the bulb projecting far into them, and are freely supplied with vessels and nerves, forming very sensitive organs of touch.—In this imperfect sketch of comparative anatomy, it must be evident to the most superficial observer that there is a general plan of structure in the animal kingdom, varying in its details, but always pointing to man as the head of creation, as the most perfect of the inhabitants of the earth. Geology proves that man was the last created of animals; comparative anatomy shows his most perfect organization. The contemplation of this vast picture of animal life is most exalting and ennobling to the devout student of nature; following the endless varieties and marvellous adaptations of created types, the mind at last must rest, without question or doubt, on the infinite wisdom and power and goodness of the supreme Architect of the universe. This article may well be concluded in the language of Agassiz, who says in his "Lectures on the Study of Natural History," that "man is not only the highest group in creation, but is the last intended type. We can even go further and say that, this having been the intention of the Creator from the beginning, we can expect no higher progress or new development. The creation of man is the highest possible development in the progress of creation." Those who wish to pursue this vast subject in its details are referred to the writings of Cuvier, John Hunter, Home, Carus, Müller, Meckel, Bell, Oken, Owen, Grant, De Blainville, St. Hilaire, Carpenter, Siebold and Stannius, Flourens, Strauss-Durckheim, and the various articles in Todd's "Cyclopædia of Anatomy and Physiology."—HISTORY OF COMPARATIVE ANATOMY. Though the philosophers of Greece had some idea of the internal structure of the animals offered as sacrifices to their gods, it was not until the time of Aristotle, or the 4th century before the Christian era, that we find any scientific treatise on comparative anatomy; the first chapter of his "History of Animals," though very imperfect, and even erroneous, in anatomical details, may be regarded as the first work on comparative anatomy. He was an exact observer, a patient collector of facts, and studied successfully many laws of nature not before recognized. After him came Theophrastus and Erasistratus. Galen, in the last half of the 2d century A.D., made many dissections of animals, of the anthropoid monkeys, and it is believed of man himself. During the middle ages the science of comparative anatomy fell into oblivion, from which it did not emerge until the 14th century; in the 16th and 17th appeared the writings of Berengario, Vesalius, Rondelet, Aldrovandus, Riolan, Harvey, and Schneider. Up to this time the science had only been studied in its separate details; the Neapolitan M. Aurelius Severinus, in his *Zootomia Democritea*, first united the scattered fragments in a general treatise on comparative anatomy in 1645; after him Collins, in England, pursued the subject into the domain of natural history and pathology. The more minute organisms of the invertebrates began now to attract attention, and were well studied by Ruysch, Stenon, Willis, Malpighi, Swammerdam, and Réaumur. In France, the academy of sciences early occupied itself with this science. In the latter half of the 17th century Perrault, Duverney, and Méry made exact observations on the structure of reptiles and fishes. About this time Needham in England, Redi in Italy, and Leeuwenhoeck in Holland, were pursuing their researches with the microscope on the minute animals, which Raspail and Ehrenberg have since so successfully illustrated. Up to this period a great multitude of scattered facts were brought together by the industrious compilers Blaes and Valentini, and in Manget's *Bibliotheca Anatomica*. With Boerhaave, in the early part of the 18th century, the science received a check from which it did not recover for nearly 50 years. The professor of Leyden, a skilful botanist, but a poor zoologist, maintained that the study of comparative anatomy could in no way advance the knowledge of the functions of the human organism. Notwithstanding this high authority, the great Haller, Spallanzani, and Ch. Bonnet continued their valuable observations on the general and comparative structure of man and animals. Physicians now had begun to consider this science as quite foreign to the art of medicine, but naturalists had already conceived the happy idea of making it the basis of a natural classification in zoology. Buffon was the first to perceive the full importance of the relation of comparative anatomy to natural history, and Daubenton made it the basis of a zoological classification. If Linnæus and his followers had been more familiar with it, they would have made less erroneous divisions of the animal kingdom, especially in the class of worms. Encouraged by Daubenton, Vicq d'Azyr, famous for his discoveries in myology, in the anatomy of birds, his researches on incubation, and his description of the brain, conceived a vast plan for the illustration of comparative anatomy, which was frustrated by his early death, but was nearly realized in the beginning of the present century by the great Cuvier in his *Leçons d'anatomie comparée*. In the last 100 years, among the noted cultivators of this science were Barthez in France; J. Hunter and Everard Home in England; Pallas, O. F. Müller, Merrem, Schneider, Kielmeyer, and Blumenbach in Germany; Camper in Holland; Morgagni, Scarpa, and Poli in Italy. The time of Cuvier marks a new epoch in comparative anatomy; he applied this science to natural history, physiology, and to the study of fossils. During this epoch have flourished Geoffroy St. Hilaire, Meckel, Oken, Carus, Panizza, Grant, and Owen, beside a host of writers of monographs on the various classes of the animal kingdom, and on special systems and organs. The first edition of the *Leçons* appeared about the beginning of the present century, and the 2d was the last work upon which Cuvier labored; for more than 30 years he had collected an immense amount of facts and materials, which are partly embodied in this book; it is a monument of patient industry, a model in arrangement, and a mine of knowledge of which all observers since have availed themselves; many of its unavoidable deficiencies have been supplied by later writers, especially by Meckel; in it are laid down not only the analogies, but the differences in the structure of organized beings. His *Ossemens fossiles*, published in the first quarter of the century, is invaluable for its scientific and minute descriptions of the bones and teeth of extinct and living vertebrates. Contemporary with Cuvier was Geoffroy St. Hilaire, whose writings on comparative and philosophic anatomy gave great impetus to the study of natural history. At the head of the German school of philosophical anatomy stands Lorenz Oken, who extended to natural science the principles which Kant had applied to mental and moral science. In 1802 he divided the animal kingdom into 5 classes, according to the predominance of the special senses; in 1805 he maintained that all organic beings originate from and consist of cells; in 1806, while walking in the Hartz forest, he picked up the blanched skull of a roebuck, and, after contemplating the partially separated bones, exclaimed: "It is a vertebral column!" In the following year he delivered the famous discourse on the "signification of the bones of the skull," renewing the idea of the cranial and vertebral homologies, which has since been modified, extended, and perfected by Richard Owen. Carus, in his "Treatise on Comparative Anatomy," of which the 2d edition was published in 1834, devotes about half to philosophical anatomy and the geometrical construction of the skeleton, carrying out the idea of Oken, St. Hilaire, and Spix, that the whole bony fabric is nothing but a vertebra repeated. According to Oken, the head is a repetition of the whole trunk, with all its systems. Cuvier ridiculed the idea of these transcendental homologies, and at his death the vertebral theory of the skull had apparently fallen into oblivion. In Owen's "Archetype and Homologies of the Vertebrate Skeleton," this theory is briefly stated as follows: "The head is not a virtual equivalent of the trunk, but is only a portion, *i. e.*, certain modified segments, of the whole body. The jaws are the 'hæmal arches' of the first two segments; they are not limbs of the head." The head is not a repetition of all the rest of the body; the skull is a region in itself, consisting of a series of segments or vertebræ essentially the same as those constituting the rest of the skeleton. The endoskeleton of the cranium, according to Owen, consists of the occipital, parietal, frontal, and nasal vertebræ; the ribs of the 1st are the shoulder blades, and the divergent appendages of the anterior extremities; the divergent appendages of the 2d are the branchiostegal rays, of the 3d the operculum, of the 4th the pterygoid and the zygoma. The different modifications of the type skeleton will be treated in the article PHILOSOPHICAL ANATOMY. Owen revived and re-worked the idea of Oken, and brought it to the now generally admitted segmental constitution of the vertebrate skeleton, as fully illustrated in the above-mentioned work.

COMPASS, a magnetized needle, balanced upon its centre so as to swing freely, used to indicate the magnetic meridian, and, by means of a graduated circle connected with it, the azimuths or bearings of objects from this meridian. The Chinese appear to have been acquainted with the property of polarity in the loadstone, and in iron or steel magnetized by it, and to have been the first to apply this. Some affirm that they employed only the loadstone (magnetic iron ore), floating it upon a piece of cork; and that the magnetized needle is the invention of Flavio Gioja, a Neapolitan, in 1302. Dr. Gilbert, in his *Physiologia Nova*, &c. (London, 1600), states that the compass was brought to Italy from China, in 1260, by Marco Polo. But there is evidence of its being used in France about the year 1150, in Syria about the same period, and in Norway previous to 1266. Several forms of the compass are in use. The mariner's, made for service at sea, and especially for indicating the direction in which the ship's head points, consists of a needdle attached to the under side of a circular card or disk, upon the top of which the cardinal points and their subdivisions are marked. A *fleur de lis* is on the N. pole of the needle, and the letter S. on the opposite pole. E. and W. are placed, the one to be toward the east, and the other toward the west, when the card, swinging with the needle, comes to rest, dividing the circle into quadrants. A diameter is drawn, bisecting each of these, fixing the N. E., S. W., N. W., and S. E. points upon the circumference; and the arcs thus obtained are again bisected by new diameters, again doubling the number of points, and the process is repeated upon the smaller arcs, obtaining in this way 32 points or divisions of the circle, each representing an arc of 11° 15′. The points are designated as follows for one quadrant, and on the same plan for the rest: N, Nb (by) E, NNE, NEbN, NE, NEbE, ENE, EbN, E. Lesser divisions sailors indicate by half and quarter points, thus: E. N. E. ½ E., N. E. ¼ N., E. ¾ N., &c. The degrees are also usually numbered around the margin of the circular card. An agate, or better, a garnet cap, is set in the middle of the needle to receive the sharp pivot standing in the middle of the compass box, upon which the needle and card are balanced. This box is of copper or brass, of cylindrical or hemispherical shape, and covered with a glass plate to exclude currents of air and dust. It is supported in a ring by 2 pivots projecting from opposite sides of the box, and this ring is swung by 2 other pivots placed so that the line connecting them is at right angles to that connecting the other 2. This contrivance, called "gimbals," is designed to keep the central pivot always vertical in the movements of the ship, the box being made heavy at the bottom, so that its centre of gravity is considerably below the points of suspension, in which it swings freely. The pivots of the outer ring are fixed to a frame or to the inside of a square wooden box, in which the instrument is placed. Instead of using gimbals, a cap with a pivot standing in the top of it is sometimes placed upon the stationary pivot, and the needle is balanced upon the top of the upper one. On board ship the compass is set in a receptacle called the binnacle, and the direction in which the vessel heads is indicated by a distinct vertical mark on the inside of the inner box, close to which the points upon the card pass as this swings round.—The compass used in land surrect the compass when she is afterward sailing on these courses. The board of trade have recommended the adoption of this practice for merchant ships. Professor Airy, astronomer royal, objects to it, and recommends instead the use of magnets placed near the compass, and so arranged as to neutralize the influence of all other local attractions. He also advises frequent examination of the compasses, and testing them as often as practicable by azimuth observations of a star or other objects. In some ships a neutral point has been found in which the local attractions were all balanced, and so continued to be, rendering this a suitable spot for the compass. The discovery of a sure method of obtaining a neutral point of this character is an object of the highest consequence; but, however secured, there are so many causes to influence the condition of the needle, some slow and some sudden in their action, such as electrical currents induced by atmospheric agencies, the heavy shocks of the waves upon the ship, &c., that frequent observations and constant care are essential to make the compass a safe guide. Sir John Ross found that the needle was attracted full 5° by the rays of the moon concentrated upon it. The British admiralty have caused experiments to be made, and have invited competition, in the construction of the compass; and in consequence, from being a common, it has become an artistic instrument in that country, great improvements having been made in it especially by the late Mr. Dent, and by Mr. Barlow, of Woolwich. The U. S. navy department, on the other hand, has done nothing to provoke such improvements; indeed, its action on the subject has rather tended to discourage them.

COMPASS, Solar, an instrument invented by the late Mr. William A. Burt, of Michigan, designed for determining at any place a true N. and S. line, from which other lines may be run in any desired direction. It is furnished with a latitude arc to be set at the degree of the latitude of the place, and a declination arc to be adjusted to the degree of the sun's declination at the time. Then, when the instrument is turned so that the rays of the sun penetrate a lens and form a bright focus between cross lines drawn upon a silver disk, the sights must be upon a true N. and S. line. A faint glimmer of the sun is sufficient, so that its use is not interrupted in the woods, nor in moderately cloudy weather. By reference to the magnetic needle attached to the instrument, the local variation is determined whenever an observation is taken. In hands accustomed to its use, it is adjusted in less time than is required for the needle of a surveyor's compass to settle. The perplexities caused by local attraction are avoided, and for this reason and others also, it is much preferred to other instruments in running important lines upon the government surveys in the western states. The boundary line between Michigan and Wisconsin was run by it; and when used to determine the latitude at points on this lin the results agreed with those obtained by the very accurate surveys of Capt. Bayfield, of the royal army. Capt. Talcott, in running the line between Iowa and Minnesota, states, in a letter to Mr. Burt, that he could not distinguish upon the map of the largest scale the line it fixed from that determined by other most careful astronomical observations.

COMPASSES, or Dividers, are mathematical instruments, consisting, in their simplest form, of two legs joined by a rivet, so that they can be opened to any distance required. The name compasses refers to their use in drawing circles; dividers to their use in measuring equal parts. Elliptical compasses, for drawing ellipses, have 4 legs, the 3d being cylindrical, and the 4th sliding upon and rotating round the 3d, while the 3 others are held immovable on the paper. Proportional compasses have also 4 legs, the 3d and 4th being simply prolongations of the 1st and 2d beyond the rivet. A very great variety of other forms are in use among special classes of draughtsmen.

COMPIÈGNE (anc. *Compendium*), a French town and capital of an arrondissement in the department of Oise, near the junction of the Oise and Aisne, on the great northern railway from Paris to Cologne, 63 m. by rail from the former city; pop. of the arrondissement in 1856, 95,002, and of the town 10,364. The latter contains a celebrated palace, originally built by Louis IX., rebuilt by Louis XIV., and greatly improved by Louis XV. and XVI., and by Napoleon. From very early times Compiègne was a favorite residence of the kings of France; several parliaments were held there, and Joan of Arc was taken prisoner before its walls, the spot of her capture, marked by the ruined *Tour de la Pucelle*, being still pointed out. In 1624 a treaty between Holland and France was signed at Compiègne. Charles IV., ex-king of Spain, resided some time in its palace; Napoleon's first meeting with Maria Louisa took place there; Charles X. spent some time there in shooting, the large forest of Compiègne abounding with game; and Napoleon III. and his court frequently visit the place, the fêtes and shooting parties given by him there enjoying a high reputation in the fashionable world. The town contains 3 fine churches, a picturesque town hall, a fine bridge (*Pont neuf*) over the Oise, a theatre, and various other public buildings.

COMPITALIA, or Ludi Compitalitii, a festival among the ancient Romans, instituted in honor of the *lares compitales*, or the deities who presided over the places where 2 or more roads met. The festival was of very ancient origin, and is said to have been restored after it had fallen into disuse by Tarquinius Superbus, who caused boys to be sacrificed at it; but this practice was soon discontinued, and garlic and poppy heads substituted for the human sacrifice.

COMPLEMENT, that which fills up to a certain unit. Thus the complement of an angle is the angle which would, by addition, make the given angle a right angle; and the complement of a number is a number which would, by addition, make the given number equal to the next higher unit. 623,741 and 376,259 are complements of each other.

COMPLEXION (Lat. *complexio*), the color of the skin. This color exists in the epidermis alone, and depends upon the admixture of pigment cells with the ordinary epidermic cells. The ancient anatomists very properly divided the skin into 2 parts or layers, the inner being denominated the cutis or dermis, and the outer the cuticle or epidermis. The celebrated anatomist Malpighi was the first to discover what was thought to be a third layer interposed between the cutis and the cuticle, to which the name of *rete mucosum*, or *stratum Malpighii*, was applied, from the circumstance that it was supposed to furnish mucus to lubricate those papillæ with which it was placed in immediate contact. M. Flourens, in an elaborate memoir on this subject, made to the French academy, went beyond Malpighi and divided this middle portion of the skin into 4 layers: 1, one lying immediately on the cutis, of a cellular structure; 2, a continuous membrane presenting the characteristics of mucous membranes generally, on the external surface of which is spread a black pigment which constitutes the 3d layer; and 4, the inner portion of the epidermis lying contiguous to the coloring matter. M. Flourens displayed by maceration all these layers in the skin of a negro; but on subjecting that of a white man to the same process, he was unable to discover the pigment or the mucous membrane deposited upon it. He therefore concluded that the skin of the colored races has an apparatus entirely wanting in the white, and regarded this diversity as forming a specific distinction, marking the European and negro as belonging to separate species; an opinion which, if the fact were true, would not admit of question, for, as Prichard properly remarks, the endowment of an entirely peculiar organ to one race of which no traces are to be found in the proximate tribe, is a much greater difference than is often to be found on comparing species which stand next to each other in the zoological series. There are many facts, however, well known to medical men, which do not admit of explanation upon M. Flourens's theory. Among these are the discolorations which take place in the skin of European races, in certain disordered states of the constitution. During pregnancy many females have a dark tinge around the nipples, varying in intensity in different cases, and in some the entire abdomen is covered with a hue as dark as that of the African negro. Bomare mentions a case of this kind in the person of a French peasant, whose abdomen became completely black during each pregnancy. Camper likewise gives an account of a female of rank who had naturally a white skin and beautiful complexion, which whenever she became pregnant began to grow brown. "Toward the end of pregnancy," he says, "she became in color a veritable negress." After delivery, the dark color gradually disappeared. Dr. Starck mentions the case of a man who after an attack of intermittent fever became as black as a negro. Blumenbach possessed a part of the skin taken from the abdomen of a beggar, which was as black as that of an African. Elliotson relates the case of a girl in St. Thomas's hospital, whose family were all white, but whose left shoulder, arm, and hand were of negro blackness, except that a stripe of white ran between the elbow and armpit; also that of a white woman, who in 20 years became as black as a negress without any evident reason. A case is related in the *Journal général*, where a woman became suddenly black from mental distress, and remained so. The blackness in this case was not caused by jaundice, or congestion of blood, but by a change in the coloring matter of the rete mucosum. The "Transactions of the Medical Society of the State of New York," for 1858, contain a case of a change of color in the person of a female, aged 16 years, the daughter of a respectable farmer, reported by Dr. W. H. Gardiner. When the patient was first seen by Dr. Gardiner, Sept. 15, 1857, the discoloration of the skin had existed for about 4 years, and she presented in color the appearance of a dark mulatto with distinctly marked European features. Her father was of English, and her mother of American birth; both had light complexions, with light eyes and brown hair. All their children resembled them in complexion except the patient of Dr. Gardiner, who possessed the same complexion as her brothers and sisters until she had attained her 14th year. Soon after puberty some dark brown spots were observed upon her forehead, which looked at a little distance as if covered with fine dust. These spots were not constant, nor did they attract much attention until they had been present about 2 years. At the age of 16, after an attack of slight illness, her complexion grew rapidly darker, and in about 2 months had acquired the deep hue which it afterward bore. At this period she presented, when at a short distance, the appearance of a white person whose skin had been covered with a thin coating of lamp-black, through which some appearance of the hue of the surface was apparent, with here and there spots, from a few lines to a fourth of an inch in diameter, which were as black as the skin of the darkest African. On removing the cuticle from one of these spots, it was found to be overspread with a pigment which had much the color of lamp-black mixed with mucilage. The hair had changed from its original brown to black, and become coarse and straight. Her eyes were of light hazel, the whites presenting that pearly appearance peculiar to the colored races. Every portion of the surface was free from an icteritous tint. She died in the early part of Oct. 1857, from disease apparently in no way connected with the discoloration of the skin. These facts show that a physical change may take place by means of which the skin of an individual of a white race may become as black as that of the native of Africa. The coloring matter is likewise liable to be absorbed in the skin of those to whom it is natural, and instances are not uncommon of negroes who gradually lose their black color, and become as white as if they were the offspring of parents of another race. The "Manchester Memoirs" contains the case of a negro 40 years of age whose skin had so changed in 2 years that the narrator was convinced that all the black portions remaining did not exceed a square foot, and the change was then continuing very rapidly. The "Philosophical Transactions" contain the case of a negress in Maryland 40 years of age who had been turning white for 15 years, and had become in that time scarcely inferior in any part of her surface to a European. Another instance is related in the "Philosophical Transactions" of a boy born in Virginia of black parents, who continued of his native color until he was 8 years of age, at which time a change began to take place, although the boy's health continued good. At first white specks made their appearance on his neck and breast, which soon increased in number and size so that from the upper part of his neck to his knees he was completely dappled. Dr. Barton relates the case of Henry Moss, a negro, in the state of Maryland, whose skin had undergone a complete change from a deep black to a clear and healthy white. The change commenced about the abdomen, and gradually extended over the different parts of the body, so that in 7 years it had spread over a greater part of the skin. It had not the appearance of a sickly or albino hue as if from the effect of disease, but was of a healthy aspect. He had never suffered from disease, and during this change, which was gradual and frequently irregular, he continued in robust health. A curious case of change of complexion is narrated by Dr. Hutchinson, of Kentucky, in the January number of the "American Journal of Medical Sciences" for 1852. The subject of this notice was a slave belonging to Mr. B., and aged 45. He was born of black parents, and was himself perfectly black until the age of 12. At that time a portion of the skin an inch wide, encircling the cranium just within the edge of the hair, gradually changed to white, also the hair occupying that locality. A white spot next appeared near the inner canthus of the left eye, and from this the white color gradually extended over the face, trunk, and extremities, until it covered the entire surface. The complete change from black to white occupied about 10 years, and but for his hair, which was crisped or woolly, no one at this time would have supposed that his progenitors had any of the characteristics of the negro, his skin presenting the healthy vascular appearance of a fair-complexioned European. When about 22, dark-colored or brown spots began to appear on the face and hands, being limited as they are at present to those portions of the surface exposed to light. Thus it appears that the coloring matter that gives rise to the various hues in the complexion is sometimes produced in the skin of persons born white, and at others removed from those born black. Now it is hardly possible, in view of these facts, to suppose with M. Flourens that the discoloration which takes place in the skin of the white person is totally different in kind and has its seat in a different structure from that which produces the black or tawny hue in the colored races. All the analogies are against such a supposition, which requires the adduction of the most positive testimony to sustain it.—Microscopical investigations have done much to solve the doubt that hangs over this question. Henle, in examining the skin of the negro by the aid of the microscope, discovered, beside the order of cells usually found, others containing the black pigment which imparts the color to the African's skin. He found these last aggregated especially on those parts of the rete mucosum which project and correspond with the furrows of the surface of the cutis. Dr. Simon, of Berlin, took pains to ascertain whether the discolorations which occasionally take place in the skin of persons of European extraction depend upon the presence of similar cells filled with pigment; and in examining the discolored portions of such skins, as the areola around the nipple, he found that the discolorations depended on the presence of cells filled with pigment in the rete mucosum. The shape and size of these cells correspond with those described by Henle as existing in this portion of the skin of the African, and which imparts to it its peculiar color. Dr. Simon also examined many of those abnormal discolorations that take place in *nævi materni*, or congenital spots, moles, and summer freckles, and found in each that the coloring substance was contained in the rete. All of these discolorations are related therefore, Dr. Simon concludes, to the normal and natural colorations in the skin of the negro. The rete mucosum, which derives so much importance from its being the seat of the coloring matter that gives rise to the varieties of complexion observable among the different races of mankind, is found by more recent microscopical researches, and especially those of Kolliker, not to be a distinct structure, but to consist of the more recently formed parts of the epidermis, whose cells are not yet consolidated by the formation of horny matter in their interior. The pigment cells which secrete coloring matter, as first shown by Dr. Simon, are not readily distinguishable in the epidermis of the white races except in certain parts of the body, as around the nipple, but are quite perceptible in the new layers of the epidermis of the negro. It was supposed by Dr. Simon that these cells gradually become flattened, and passing to the surface give the dark tint observable in the colored races. The more recent examinations of Kolliker establish the fact that the cells containing coloring material do not change their place, but remain stationary in that portion of the epidermis in which they were first developed. Dr. Carpenter says: "The epidermis or cuticle covers the exterior surfaces of the body as a thin, semi-transparent pellicle, which is shown by microscopical examination to consist of a series of layers or cells, which are continually wearing off at the external surface and are being renewed at the surface of the true skin, so that the newest and deepest layers gradually become the oldest and most superficial, and are at last thrown off by desquamation. In their progress from the internal to the external surface of the epidermis, the cells undergo a series of well-marked changes. When we examine the innermost layer we find it soft and granular, consisting of nuclei in various stages of development into cells, held together by a tenacious semi-fluid substance. This was formerly considered as a distinct tissue, and was supposed to be the peculiar seat of the color of the skin; it received the designation of *rete mucosum.* Passing outward, we find the cells more completely formed; at first nearly spherical in shape, but becoming polygonal where they are flattened one against another. Mingled with the epidermic cells we find others which secrete coloring matter instead of horn; these are termed pigment cells. The most remarkable development of pigment cells in the higher animals is on the inner surface of the choroid coat of the eye, where they have a regular arrangement, and form several layers known as *pigmentum nigrum.* The black color is given by the accumulation within the cells of a number of flat oval or rounded granules of extreme minuteness, which exhibit an active movement when set free from the cell, and even while enclosed within it." Quain and Sharpey say: "Many of the cells of the cuticle contain pigment, and often give the membrane more or less of a tawny color, even in the white races of mankind. The blackness of the skin of the negro depends entirely on the cuticle. The pigment is contained principally in the cells of the deep layer or rete mucosum, and appears to fade as they approach the surface, but even the superficial part possesses a certain degree of color."—Exposure to light exercises a marked influence over the development of the pigment cells of the skin, and hence many persons become spotted with brown freckles under the stimulus of a summer sun. In the same manner the light skin of the European acquires a swarthy hue when exposed to a long continuance of the sun's rays in a tropical climate, which is due to a development of dark pigment in the cells of the cuticle. Bishop Heber, in his observations on India, states that "it is remarkable to observe how surely all these classes of men (white—Persians, Greeks, Tartars, Turks, and Arabians) in a few generations, even without intermarriage with the Hindoos, assume the deep olive tint, little less dark than the negro, which seems natural to the climate. The Portuguese have, during 300 years' residence in India, become as black as Caffres." "The hottest portion of the globe," says Dr. Pickering, "appears to be about 17 degrees in width, counting from lat. 27° N., and extends from the Atlantic to the Ganges. One-third, perhaps, of this immense tract is inhabited by the white race, although under a physical aspect that would not readily be recognized by Europeans. The complexion, always dark, is in frequent instances sufficiently so to conceal a flush; indeed, the Malay brown complexion seems to preponderate, and I have seen Arabs of deeper hue who were apparently of unmixed descent. In short, the white race is here protean or polymorphous, and exhibits a diversity in feature and complexion that I have not found in the other races." Dr. Smith says that the influence of climate on the human complexion is demonstrated by well-known and important events within the memory of history. From the Baltic to the Mediterranean the different latitudes of Europe are marked by different shades of color, and in tracing the origin of the fair German, the dark-colored Frenchman, and the swarthy Spaniard and Sicilian, it has been proved that they are all derived from the same parent stock, or at least from nearly resembling nations. The southern provinces of France, of Italy, of Spain, and of other European countries, are distinguished from the northern by a much deeper shade of complexion; thus, the traveller through Spain will discover that while the ladies of the province of Biscay possess fair complexions, those of Granada and the southern provinces are endowed with that dark, swarthy hue which the Spaniard considers as constituting one of the chief elements of beauty. The Georgians and Circassians, who are acknowledged to be the fairest people on the globe, when transferred to a residence in Constantinople, lose their delicate complexion and gradually acquire a sallow hue, which, in their descendants, becomes a dark olive. But perhaps the most striking example is furnished by the Jewish race, who, by their prohibition to intermarry with other nations, form a distinct people in every quarter of the globe, and yet show noticeable shades of complexion in different climates. The native population of the United States furnish a strong illustration of the influence of climate over the complexion. Deriving in a great part their origin from the more northern nations of Europe, and especially from the English and Irish, whose complexions are remarkably fair, they are found to differ from their ancestors in this respect in a very material degree. A certain paleness of countenance, differing entirely from the marked white and red of the English, strikes the observant traveller at every step of his progress through the United States. The elevated temperature of the lowlands in Virginia and Maryland, especially near the sea-coast, greatly contributes to impart a darkness to the complexion which, when associated with the paleness so common to the whole population of the United States, removes them in a most marked manner from their British ancestors. It is very easy to distinguish the natives of the eastern shore in Maryland, and of the counties contiguous to the ocean in Virginia, from their brethren who inhabit the more elevated districts in these states, as much by the marked sallowness of the complexion of the former as by their excitable temperament and spare habit of body. Going still further south, along the sea-coast of Georgia and the Carolinas, it is not unusual to meet with individuals, especially among those who are much exposed to the influence of the sun, who are but a few shades lighter than the aboriginal tribes who formerly peopled these states. "If," says Dr. Barton, "these remarkable changes are wrought on the system in the term of a few years, we ought not to be surprised at seeing even the most opposite tints and features produced from the long and permanent operation of moral and physical causes." Yet notwithstanding the influence exerted by heat in darkening the complexion, it is nevertheless true that many light nations are found inhabiting the warmest regions, while there are dark ones resident in the coldest. Lord Kames, M. de Virey, and Prichard have quoted many instances of this kind. "We found," says Humboldt in his "Political Essay on New Spain," "the people of the Rio Negro swarthier than those of the lower Orinoco, and yet the banks of the first of these rivers enjoy a much cooler climate than the more northern regions. In the forests of Guiana, especially near the sources of the Orinoco, are several tribes of a whitish complexion, the Guiacos, Guajoribs, and Argues, of whom several robust individuals, exhibiting no symptom of the asthenical malady which characterizes albinos, have the appearance of true mestizos. Yet these tribes have never mingled with Europeans, and are surrounded with other tribes of a dark brown hue. The Indians in the torrid zone, who inhabit the most elevated plains of the Cordilleras of the Andes, and those who are under lat. 45° S., have as coppery a complexion as those who, under a burning climate, cultivate bananas in the narrowest and deepest valleys of the equinoctial region." "Do we not in fact behold," says Virey, "the tawny Hungarian dwelling for ages under the same parallel and in the same country with the whitest nations of Europe, and the red Peruvian, the brown Malay, the nearly white Abyssinian, in the very zones which the blackest people in the universe inhabit? The natives of Van Diemen's Land are black, while Europeans of the corresponding northern latitudes are white; and the Malabars, in the most burning climate, are no browner than the Siberians." The temperature of a place, however, depends not only on its latitude, but on its elevation and its meteorological conditions. For these reasons the lines of equal temperature do not always agree with the same degrees of latitude, nor are they measured by the widest range in the thermometer. Now, although the elevation of temperature in Africa may not at any one time be greater than is sometimes observed in America, yet there can be no doubt that the annual amount of heat far exceeds that found in the tropical latitudes of the western continent. (See Climate.) In measuring the effect of any particular climate upon complexion, therefore, it is necessary not only to determine its absolute degree of latitude, but also to ascertain what other causes are in operation tending to bestow a deeper or lighter shade upon the human countenance. It is a well-known fact that the luxuriance of vegetation is not so much dependent on the intensity as on the mean quantity of heat; and the same law which operates in effecting a distribution of plants over the surface of the globe independent of well defined lines of latitude, likewise exercises its influence in determining the intensity of shade observable among the different races of mankind. Those nations most exposed to the weather and furthest removed from civilization are, as a general rule, the darkest. Thus the South sea islanders, who seem to be of one family, vary in complexion according to the degree of their civilization. The New Hollanders, who are savages, are black; the New Zealanders, half civilized, are tawny; the Friendly islanders are frequently of an olive color; while the people of Otaheite and the Society islanders, who are the furthest advanced in civilization, are often possessed of a light complexion and flowing ringlets, and sometimes are considered really beautiful. The same fact is observable among persons of different degrees of cultivation in countries having complete and absolute divisions of rank. Thus the nobility of France, Spain, Italy, Germany, and England are not only easily distinguished from the peasantry, but the intermediate classes are as readily determined. An interesting fact connected with this subject is, that the children of those most exposed to the influence of the sun among the white races, and even the offspring of many who possess a tawny color, are as fair at birth as those of the most delicately complexioned parentage. The children of the Moors are born white, and acquire the complexion of their parents in after years. Russell says that the inhabitants of the country in the vicinage of Aleppo are naturally of a fair complexion; and among the women in the upper ranks of life this fair skin is preserved through life, while the inhabitants of that country are generally tinged with a shade which, although lighter than the negro, is deeper than that of the Telingan.—The division of mankind by Blumenbach into the 5 varieties of Caucasian, Mongolian, Ethiopian, American, and Malay, is, among other characteristics, largely founded on difference in complexion. The Caucasian is, for the most part, characterized by a white skin and red cheeks; the hair of a nut-brown, running on the one hand into yellow, and on the other into black, soft, long, and undulating. To this variety belong all European nations except the Laplanders and the rest of the Finnish race, the western Asiatics as far as the Caspian and the Ganges, and the people of north Africa. The Mongolian has a skin of an olive color, and black, stiff, straight, and sparing hair. All the remaining Asiatics except the Malays, together with the Finnish races of north Europe, belong to this variety. The Ethiopian has a black skin, and black curly hair. The inhabitants of Africa, with the exception of those of the northern part included in the Caucasian variety, are of this race. The American possesses a skin of a copper color, with black, stiff, straight hair. This division comprehends all the aboriginal tribes of America. The Malay has a tawny skin, and black, soft, curled hair. The inhabitants of the Pacific ocean, of the Marian, Philippine, Molucca, and Sunda islands, are of this race. Dr. Pickering, who has made very extensive observations upon different races, adopts a new classification. "I have seen in all," he remarks, "11 races of men, and though I am hardly prepared to fix a positive limit to their number, I confess, after having visited so many different parts of the globe, that I am at a loss where to look for others. They may be enumerated conveniently enough in the order of complexion, beginning with the lightest. *a.* White: 1, Arabian; 2, Abyssinian. *b.* Brown: 3, Mongolian; 4, Hottentot; 5, Malay. *c.* Blackish brown: 6, Papuan; 7, Negrillo; 8, Indian, or Telingan; 9, Ethiopian. *d.* Black: 10, Australian; 11, Negro." This classification of Dr. Pickering is here introduced to show the importance of complexion as a characteristic of the different varieties of the human race. It will be observed that the color of the hair appears to be in a great degree connected with that of the skin; and it may be added, that the color of the eyes likewise bears the same relation. Light hair is the usual accompaniment of a white and thin skin, while dark hair and a dark complexion are usually associated together. Among all races there is a class termed albinos, whose bodies appear to be destitute of coloring matter, and who, beside a creamy-white skin, have white hair and pale, rose-colored eyes, owing to the absence of the pigmentum nigrum from the sclerotic coat of the eye. This renders them unusually sensitive to light. Werfer, in his amusing description of those he saw among the inhabitants in the isthmus of Darien, says: "They see not well in the sun, poring in the clearest day, their eyes being weak and running with water if the sun shines on them, so that in daytime they care not to go abroad, unless it be in a cloudy, dark day. Beside, they are a weak people in comparison with others, and not very fond of hunting or other laborious exercises, nor do they delight in such; but notwithstanding their being thus sluggish and dull in the daytime, yet when moonshiny nights come, they are all life and activity, running abroad into the woods and turning as fast by moonlight, even in gloom and shade, as other Indians by day." Dr. Davy, in speaking of an albino in Ceylon, where they are often seen, says: "The young albino 12 years of age, in England, and certainly in Norway, would not be considered peculiar, for her eyes were light blue, and not particularly weak, and her complexion fresh and rosy. She had considerable pretensions to beauty, and was not without admirers among her countrymen. The Indians are of the opinion that the white race were propagated from an albino, and there is a tradition among them to this effect."—Yet, however marked may be the influence of climate and surrounding circumstances upon the complexion, it is incompetent to produce such changes as to lead the ethnologist to mistake one race for another. The hue of the European, although it may exhibit a deeper shade under some circumstances than under others, is the same under the influence of the intense heat of the East Indies or the tropical climate of South America, and is entirely distinct from that of the natives of those countries. The three races which exist side by side in America are never merged into each other by mere contiguity, but continue separate and distinct except when a commingling of the races gives rise to a progeny that partakes of the character of both parents. The children of Europeans, of negroes, and of Indians, born in America, in the course of a few days after their birth begin to assume the complexion of their parents. Those of Caucasian parentage, whether natives of a high or low latitude, exhibit the fair complexion due to their origin, which may be retained, by proper care, through life; but those born of American or Ethiopian parents, however carefully guarded from the influence of the heat and sun, rapidly acquire the dark or tawny hue of the race from which they have sprung. Nor is the force of this position lessened by the observation of those travellers who have found the different tribes of the white race that have for centuries inhabited the tropics of a hue nearly as dark as that of the natives of the countries where they are found. A close examination in each of these cases would develop a marked difference between the shade of color of the white and that of the colored person, as distinct in character and as easily discerned as are the features that distinguish the one race from the other. The inferences to be drawn from these facts are: 1, that no essential anatomical difference exists between the skin of the white and colored races; 2, that climate, temperature, and exposure are competent to produce marked changes in the complexion; 3, that these changes under no circumstances proceed so far as to bestow the complexion peculiar to one race upon the individuals of another; 4, that children of white parents, under every condition of climate, are born fair; and 5, that the children of parents of colored races partake of the complexion of their parents from their earliest infancy.

COMPLINE (Fr. *complies;* Lat. *completorium*, complement), the 8th and last division of the Roman Catholic breviary, recited after vespers, and as a prayer for God's protection during the night.

COMPLUTENSIAN POLYGLOT. See BIBLE.

COMPOSITE ORDER, one of the 5 orders of architecture, a combination made by the Romans of the Ionic and Corinthian styles, and hence also called the Roman order. It differs from the Corinthian chiefly in having upon the capital the volutes of the Ionic order, and its frieze and other of its members admit of a richer decoration. Among the principal examples of this order at Rome are the temple of Bacchus, and the arches of Septimius Severus and of Titus, and the arch in the baths of Diocletian.

COMPOUND BLOWPIPE. See BLOWPIPE.

COMPRESSION. The two prominent theories of the constitution of visible bodies respectively suppose these to be made up of ultimate indivisible particles (atoms) and centres of force (dynamic points). Upon either view it does not follow that the substance of bodies, however apparently compact, occupies the whole space included within their bounding surfaces. On the contrary, a multitude of observations have been generalized in the conclusion that, apart from any sensible pores which they show, all bodies have their ultimate particles surrounded with minuter invisible interspaces, but regular for each form or state of body; and these have been called the physical pores, or pores of the matter of the body. Leading proofs of this conclusion are found in the changes of volume which all bodies undergo in consequence of variations in their temperature, and again in the diminution of volume which it is believed they all exhibit under increase of pressure from without. The property of bodies, in virtue of which, without alteration of their mass, their volume may be diminished by pressure externally applied, is termed compressibility; and this property is evidently a consequence of porosity. The compression exhibited by the sponge and like bodies is not strictly an illustration of the property in question, since this result is due to partial or complete obliteration of the sensible pores of the flocculent mass. A true example may be found in the reduction of the volume of an apparently compact mass of gold or iron by hammering, or of a definite measure of water under severe pressure. In these cases the atoms must be supposed to be brought nearer together, and the physical pores to be lessened in size. The relative compressibilities of different bodies are readily ascertained by subjecting them to a given pressure, and observing the diminution of volume resulting. Care must be taken in this process that the temperatures be the same in all cases, since each degree of heat entering into the condition of a body is, in almost all instances, equivalent to a given increase of the repulsion between its particles, and consequently results in so much resistance to the mechanical force applied, with a shrinking of the bulk proportionally less. Under the same pressure a solid heated is larger than when cold; and the pressure of 14.6 lbs. per square inch, which reduces a body of steam to half volume, diminishes the volume of the water from which the steam may be formed by scarcely the $\frac{1}{20000}$ part. Indeed, it is a general law, having few exceptional cases, and these due to the intercurrence of a more special law of crystallization in certain liquids, that in order that actual compression of any bodies whatever may occur, heat must be evolved, or a force must pass from the latent (mechanical) to the sensible (thermal) form. Gases and vapors are the most compressible, and in these only is the rate of compression, within limits widely separated, quite uniform. With solids, unless they are spongy in texture, great pressure is required to reduce the volume sensibly. Compressed wood has its hardness and strength augmented, and is now prepared for many uses in which these qualities are desirable. The foundations of massive buildings, though of granite, can be shown to undergo a sensible lessening of volume under the superincumbent weight. Coins, after being subjected to the stroke of the die, have a less volume than before, and greater density. Standard measures of length made with the greatest care, and even of platinum, being stood on end for some time, are shortened in a measurable degree, and only partially recover their former length by being kept in a horizontal position. The forcing of a sweat of water-drops through the mass of a tolerably thick hollow ball of gold, in which that liquid was confined, in the attempt of the Florentine academicians to compress it, led to the acceptance for a long time of the total incompressibility of liquids. But Canton, Oersted, and others, have since proved that liquids are compressible. Oersted found that under each additional atmosphere water lost 46, mercury 2, and alcohol 21 millionths of their volumes respectively at the ordinary pressure of the air. It is said by some that this slight shrinking is that not of the liquids, but of the gases they contain; but this is very like a quibble. Liquids which contain very little gaseous matter in suspension, as large bodies of water, conduct sound much more loudly and rapidly than air; yet no body can conduct sound that does not undergo pulsations, *i. e.*, alternate compressions and expansions. So liquids rebound from liquids, proving the compression that must precede this manifestation of elasticity. Arago's refractometer affords the final and unanswerable proof. In this instrument two rays of light, refracted by passing through two long tubes filled with the same or unlike liquids or gases, and closed at the ends with glass plates, are so directed as to interfere after their exit, casting a series of fringes on a white screen, the place of which is noted. If the tubes be filled with liquid, any considerable increase of pressure on the liquid within either of the tubes immediately displaces the fringes toward that side, proving that the liquid then refracts with greater power, and hence has had its density increased; and this displacement of the fringes is for each liquid always proportional to the pressure which takes effect upon it.

From all the facts, two generalizations are warranted: the compressibility of bodies is generally, but not always, in the ratio of their porosity; all bodies are compressible, though the various degrees in which they show this property have a very wide range. (For the law of compression and expansion of gases, see GASES.)

COMPTON, a S. co. of Canada E., pop. 7,463, formed from Sherbrooke at the reorganization of counties under the representation act of 1853, bordering on Maine, New Hampshire, and Vermont, and intersected by the Grand Trunk railway. Its surface is diversified by several lakes, and a mountain range extends along its S. and S. W. border. The soil, drained by the head waters of St. Francis and Chaudière rivers, is moderately fertile. Capital, Compton.

COMPTON, HENRY, bishop of London, born at Compton in 1632, died July 7, 1713. He was the youngest son of Spencer, second earl of Northampton, studied at Oxford, and after the restoration became a cornet in a regiment of horse. Afterward he left the army for the church, was ordained at the age of 30, and became bishop of Oxford in 1674, and bishop of London in 1675. Charles II. made him a member of his privy council, and intrusted to him the education of his nieces Mary and Anne. He was distinguished for his hostility to the church of Rome. After the accession of James II., Dr. Sharp, rector of St.-Giles's-in-the-Fields, having preached several sermons vindicating the church of England against the papacy, became highly obnoxious to the court, and Compton was required by a royal order to suspend him. His refusal to obey was made the ground of his own suspension. He was restored to his see at the time of the revolution, and, together with the bishop of Bristol, made up the majority of two in the house of lords for filling the vacant throne. He performed the ceremony of the coronation of William and Mary, and was afterward appointed one of the commissioners for revising the liturgy. During the reign of Anne he was put on the commission for the union of England and Scotland. The reconciliation of dissenters with the church of England was one of his favorite projects.

COMSTOCK, JOHN LEE, M.D., an American author of popular school books, born in Lyme, Conn., in 1789, died at Hartford, Conn., Nov. 21, 1858. Dr. Comstock studied medicine, and served as an assistant surgeon in the war of 1812 at New London and at Plattsburg. At the close of the war he left the army and settled at Hartford in the practice of medicine. Soon after, his attention was turned toward the compilation of school books of a higher order than those at that time in use. He wrote elementary treatises on natural philosophy, chemistry, mineralogy, botany (and several distinct works on this subject), geology, physiology, natural history, and physical geography, and an essay on gold and silver. Many of these works had a very large sale; the sales of the "Natural Philosophy" reached nearly 900,000 copies, and the "Chemistry" also attained a wide circulation. The former was republished in England and in Germany. Dr. Comstock was not a profound scholar, and some of his works were only compilations; but he was fond of natural science, and had made very considerable attainments in several departments of it. He possessed a high degree of mechanical ingenuity, and constructed most of his apparatus himself, and being a skilful draught-man made the drawings for most of the illustrations of his works.

COMTE, AUGUSTE, a French philosopher, and the founder of the system of positivism, born at Montpellier, Jan. 19, 1798, died in Paris, Sept. 5, 1857. His family were monarchical and Catholic in their sentiments, but at an early age he discovered a tendency to break away from the traditional faith both in politics and religion. He received his education at the *école polytechnique* of Paris, where he afterward (1832) became a teacher. He gave his principal attention to mathematics and the physical sciences. He was not indifferent, however, to moral inquiries, and as the socialism of St. Simon was then in vogue, he fell into the vortex created by that powerful and enthusiastic reformer. This was in the year 1815, and Comte, though the youngest, soon became one of the most prominent of his disciples. In 1820 he was called upon to prepare an exposition of the doctrines and objects of the school, which he did in a little work called the "System of Positive Politics;" but St. Simon saw at once that his pupil had adopted quite another idea than his, and that positive politics was not socialism as he understood it. His principal objection was that Comte overlooked entirely the religious or sentimental side of human nature, which was a valid and good criticism as far as it went. In 1825 the school divided; Enfantin, Bazard, Augustin Thierry, Chevalier, and others, proceeding to organize a system of propagation for the opinions of their master, and Comte taking to his own course. He was arrested, however, in his speculations, in 1826, by what he denominates "a cerebral crisis," but which his physicians described as a brain fever, terminating in insanity. He recovered after a brief interval, and devoted the rest of his life to teaching mathematics, as a professor in the *école polytechnique*, and to the gestation of his new schemes of thought. In 1830 he began the publication of his chief work, the *Cours de philosophie positive*, which was not completed till 1842, in 6 large volumes. It was filled from beginning to end with peculiarly novel speculations, evincing a mind of rare logical force, great comprehensiveness of view, and an almost unprecedented power of generalization. It attracted little or no attention, however, and it was 16 years after the publication of the first volume before it was noticed in any leading reviews. The "Edinburgh Review" then contained an article upon it, said to be written by Sir David Brewster, but discovering only the vaguest

iation of what was really original or
n the work. In 1843 Comte published
:té élémentaire de géometrie analytique,
1854 a *Traité d'astronomie populaire,*
rorks of a strictly scientific cast. Mean-
he had quarrelled with his brother pro-
, the result of which was that he lost his
employment. He then supported him-
r private teaching, by Sunday lectures to
l audience, and by the voluntary contri-
s of the little knot of disciples which had
radually formed around him, one of the
t and most earnest of whom was an
can, the late Horace Binney Wallace, of
elphia. In 1848 a *Discours sur l'ensem-*
positivisme appeared, recapitulating his
ıe as a whole, and giving a brief outline
jt proposed for the future. But it was
prelude to a work printed in 1851–'2,
the *Système de politique positive,* in 4
s, which gave the consummate and final
f his doctrine. A short *Catéchisme po-*
'e, since published, is a mere summary ex-
n of the teachings of the larger works.
l otl ' minor works have appeared, but
i to the fundamental views already
In the interval between the pub-
ıı his first great work, the *Cours,* and
ond, the *Système,* another "crisis" oc-
in the life of Comte—not this time a crisis
brain, but of the heart. He fell devoutly
with a married lady, whom he calls the
l Clotilde; and the profound affection
he conceived for her, being suddenly cut
her untimely death, wrought an impor-
ange in all his views of life. It convinced
at the old criticism of St. Simon was true,
hat the religious or sentimental side of
ı nature was not to be despised. Accord-
his speculations afterward took a more
d turn toward religion and morals.—
's scheme of thought is so immense that
t to describe it in an abridgment can
justice to it; yet a few words in re-
ıı are necessary. His first position is that
man mind, in its progress historically and
lually, passes through three stages of de-
ıt: 1, the theological, in which all the
na of nature are imputed to the active
of the gods; 2, the metaphysical, in
the gods are made to give place to certain
ct entities and quiddities called "nature,"
ıony," "number," &c.; and 3, the posi-
scientific, in which it is discerned that
an know nothing of causes, and is only
refer phenomena to their general laws
stence or succession. Arrived at this
science is born, and knowledge, no longer
by the inscrutable or misled by the ima-
, advances from one generalization to an-
to a comprehensive perception of the
as a whole. His second position, then,
ıı this advance it proceeds in a regular
chical order, from the simple to the com-
r from the most elementary relations of
rs to the highest and deepest complications of society and life. This hierarchical order of the sciences he arranges as follows: 1, the most general and simple of all, dealing only with numbers and magnitudes—mathematics; 2, the application of the principles of mathematics to the phenomena of the celestial sphere, or astronomy; 3, the application of mathematics and astronomy to the phenomena of the terrestrial sphere, or general physics, including heat, light, optics, electricity, &c.; 4, the science of the phenomena of the interior of bodies or of molecular changes—chemistry; 5, the science of the phenomena of individually organized being, or vegetable and animal life, termed biology; and 6, the science of the phenomena of corporate or social life, which he terms sociology, and which, as presupposing and containing all the former, is the queen and divinity of all the sciences. In the exposition of this part of his system, Comte evinces the most familiar acquaintance with all the results of scientific research, and puts forth the most striking and original thoughts as to their mutual dependence and relation. Having finally reached his goal, or sociology, he undertakes, as his third position, a demonstration of the statics and the dynamics of social life, or of the fundamental principles of order and liberty. The first element of order is the family; the second, the community, composed not of individuals but of families, and coöperating, to a certain extent, in their employment; and the third, the government or state. Liberty is the effect of this harmonious organization, and progress the development of it, by means of the conquest: 1, of material nature; 2, of the lower propensities by the higher intellectual faculties; and lastly, of the selfish passions by the noblest social affections. To this point, the mere superiority of the social affections, Comte had gone in his first work; but after his love experience, and upon a maturer consideration of the nature and objects of life, he saw that a deeper question remained untouched. It was that of religion, which he conceived to be the complete harmony of human existence, individual and collective, or the universal unity of all existences in one Great Being, whom he calls Humanity. Religion, at first spontaneous, dissipates itself in fetichism and polytheism; next, inspired, it lifts its thoughts to the vague abstract unity of God; and finally, revealed or demonstrated, it finds its object in a true, living, and ever active being, which is humanity. This alone is the genuine end and object of all worship, and to this every effort of the good man should converge. But, as eminent individuals, Moses, Socrates, Mohammed, &c., are manifestations of the Grand Being, it is not improper to pay to them a high yet qualified respect. Accordingly, Comte has arrayed the formula of an exalted worship of humanity by means of homages and festivals to its most illustrious representatives. He has even reformed the calendar in view of it, and calls the months after the names of illustrious benefac-

tors, and the weeks from others scarcely less distinguished. Thus the preface to his last work is dated the 11th of Cæsar, 64, which means May 2, 1852; and the prospectus of his review, the 8th Archimedes, 64, which is April 1, 1852. Some of his disciples pursue the same practice. It is impossible for us to judge the system of Comte here, and we can only refer the reader to his own works; to a brief outline of them called Comte's "Philosophy of the Sciences," by G. H. Lewes, London, 1853; and to "The Positive Philosophy of Auguste Comte," by Harriet Martineau, New York, 1854 He died of hypertrophy of the heart, and was buried in the cemetery of Père La Chaise.

COMUM. See Como.

COMUS, in the later Greek mythology, the god of festive mirth. He is represented as a winged youth, intoxicated and languid after feasting, his head sunk on his breast, his legs crossed, his countenance flushed with wine. In one hand he feebly grasps a hunting spear, in the other an inverted torch.

CONANT, Thomas J., D.D., an American orientalist and Biblical scholar, born Dec. 13, 1802, at Brandon, Vt., was graduated at Middlebury college in 1823, and for nearly 2 years afterward pursued his philological studies under the personal supervision of Prof. R. B. Patton. After a brief tutorship in Columbian college, D. C., he accepted an appointment as professor of languages in Waterville college, Me. From an early period he had taken an interest in oriental philology, and in 1833, having resigned his professorship, he repaired to the vicinity of Boston in order to extend his acquaintance with the libraries and learned men of Cambridge, Newton, and Andover, and to prosecute more advantageously his studies in Hebrew, Chaldee, Syriac, and Arabic. In 1835 he was made professor of Biblical literature and criticism in the theological seminary at Hamilton, N. Y., and in 1850 he assumed a similar office in Rochester seminary; While professor at Hamilton he visited Europe, where he spent 2 years at Halle and Berlin. For some years past Dr. Conant has been concentrating his labors upon an object which he regards as the great work of his life, the preparation of an improved popular version of the Scriptures. His first elaborate production, written while yet at Middlebury, was an essay on the laws of translation, and the subject has been a speciality with him ever since. A critical comparison which he had occasion to make at Cambridge in 1827, of the earlier English versions of the Bible with the "authorized" version, and with the subsequent partial attempts at improvement upon it, impressed him with the desirableness of a complete new translation, which, while equally adapted to popular use, should be made on principles more strictly and soundly scientific. He has adhered to the conception with tenacity and concentration of purpose, and he has resolutely withheld himself from all public efforts not bearing directly upon this object. In 1839, however, he yielded to the solicitation of literary friends, and to the pressure of his own professional wants, so far as to prepare a translation of Gesenius's Hebrew grammar, which he has since enlarged with the additions of Rödiger. Scholars, too, will remember the "Defence of Gesenius's Hebrew Grammar against Prof. Stuart's Translation," published in 1846. Dr. Conant's work still holds possession of the schools, and has passed through several editions in England. The first fruits of his labors on the Bible have been given to the public in his version of the book of Job, published by the American Bible union in 1857. Dr. Conant has recently resigned his chair at Rochester and established himself in the vicinity of New York.—Hannah Chaplin, wife of the preceding, daughter of the Rev. Jeremiah Chaplin, the first president of Waterville college, born at Danvers, Mass., in 1812. Her childhood and youth were passed among books and associations of a literary kind, and in 1832 she was married to her present husband. The mother of a large family, to whose training she has assiduously devoted herself, Mrs. Conant has always found time for literary pursuits. She first attracted attention as editor of a "Mother's Journal." In 1844 she translated "Lea, or the Baptism in Jordan," a tale of the religious life of the 2d century, by Strauss, the evangelical court preacher of Berlin. This was followed in 1850–'52 by translations of Neander's practical commentaries on the epistles of John and James and the epistle of Paul to the Philippians. Her next publications were original works. The first, entitled the "Earnest Man," a biographical sketch of Dr. Judson, the Burman missionary, was issued in 1855; and the second, a "Popular History of English Bible Translation," in 1856. The "New England Theocracy," a translation of an excellent outline of the early ecclesiastical history of the pilgrim land, by Uhden, a pupil of Neander, was published early in 1857. The "History of the English Bible," which is the most elaborate and important of her works, presents a richer variety of historical materials, more philosophically digested, than Anderson's ponderous octavo on the same subject.

CONCAN, North and South, a maritime tract of the Bombay presidency, British India, extending from the Portuguese settlement of Goa on the S. to the river Damaun on the N., bounded W. by the Indian ocean and E. by the Ghauts; area, 9,441 sq. m.; pop. 1,461,087. The surface is rugged, and the mountains on the E. frontier attain in some places an elevation of 4,700 feet. Deep ravines and thick forests occupy the E. portion of the country, whence the surface slopes by degrees toward the sea-coast, where the mean elevation is not more than 100 feet. Part of the country is fertile, populous, and susceptible of high cultivation. One of the most remarkable characteristics of the climate is the violence of the monsoon rains, the mean annual fall at Mahableshwur amounting to 239 inches. There are numerous

harbors, which for ages afforded secure
to pirates. So formidable had these
bers become in the 18th century, that all
suffered which could not show a pass
chief of the pirates. The Great Mogul
ed a fleet for the express purpose of
them; the Portuguese frequently at-
em; and from the year 1756 numer-
peditions from Bombay were despatched
them by the British; but the piratical
was not wholly suppressed until 1812.
the Hindoos conquered the country they
to a tribe of Brahmins, from whom it was
d by the Mohammedan kings of Bejapoor.
17th century it passed into the possession
jee, the founder of the Mahratta empire.
the close of the same century the pirate
onajee Angria established a kingdom here,
ing 120 miles along the coast, and inland
s the Ghauts. In 1756 most of this terri-
as restored to the peishwa by the united
and Mahratta forces. The N. Concan,
nhabited by wild uncivilized tribes call-
, was once held by the Portuguese. The
y was ceded to Great Britain in 1817. S.
is peopled by coolies. The country passed
he British rule, partly by cession, partly
quest, in 1818.—The entrances in the port
can, exclusive of the coasting trade of the
tes, were, in 1854, 682 vessels, tonnage
in 1855, 629 vessels, tonnage 6,240;
earances in the 2 years were 945 ves-
nnage 8,246.

CEPCION, a province of Chili; area,
q. m.; pop. according to the census of
l, 1857, 122,281; bounded by the rivers
nd Biobio, the Andes, and the sea; lying
n the parallels of 36° and 37° 30′ S. and
lians 70° and 74° W.; noted for its
for its rich agricultural produce, and
e exports of timber, lumber, hides, and
ts capital, of the same name, pop. about
is situated on the right bank of the Bio-
0 m. from Santiago, in lat. 36° 49′ 30″ S.,
° 5′ 30″ W. It is the seat of a bishop and
us learned and charitable institutions. Its
alcahuana, on Concepcion bay, at a dis-
f about 8 m. from the city, is one of the
Chili. In 1857 the entrances were 278
, tonnage 83,196, and the clearances 287
, tonnage 83,974. Concepcion has suffered
rom Indian attacks and from earthquakes.

CEPTION, Immaculate. See Immacu-
onception.

CERT, a performance of vocal or instru-
music, or of both, in which one or more
take part. It was originally a public per-
ce by 2 or more persons in competition
ize. The earliest recorded concert is that
Filarmonici at Vicenza, about 1565. A
later the first in England was given at
, and the concert is now one of the most
r entertainments of the day. In Europe
merica many societies have been organ-
r the purpose of cultivating a public taste
hestral music of the highest class, among which the most celebrated are the *Gewand-Haus-Concerte* of Leipsic, founded in 1742, the symphony *soirées* of Berlin, the *conservatoire* of Paris, the old and new philharmonic societies of London, and the N. Y. philharmonic society.

CONCERT PITCH, the height or pitch to which a given note is tuned, and which determines the pitch of all the other notes. No fixed standard for concert pitch has been established.

CONCERTO, a piece of music written for a single instrument, with accompaniments by a full orchestra or by other instruments.—Concerto Grosso, orchestra music in which all the instruments are brought into action in order to form the most effective contrasts and to swell the volume of sound. The word *concerto* is used here in its primary signification of contesting or striving in emulation.—Concerto Spirituale, a concert for the performance of individual pieces of sacred music, or of oratorios and the like.

CONCHA, José de la, captain-general of Cuba, born in Madrid about 1800, took part in the struggles in South America, and against Don Carlos, was appointed lieutenant-general in 1839, and officiated as captain-general of the Basque provinces from 1843 to 1846. About this time he was placed at the head of the Spanish cavalry, and was captain-general of Cuba from 1849 to 1852, when he was removed after the attempt of Lopez and replaced by Cañedo. Joining his brother in opposing the government, he was banished from Spain in Jan. 1854, and fled to France, where he was detained at Bordeaux. After the July revolution of 1854, he was reappointed captain-general of Cuba, and, with the exception of a short suspension of his functions by Narvaez's administration in 1856, when Lersundi was appointed as his successor, he continued to hold the office until Dec. 1858, when he tendered his resignation, but consented to remain in Cuba until after the settlement of the difficulties with Mexico. Gen. Concha is strenuously opposed to American influence in Cuba, and an enthusiastic champion of Spanish interests.—Manuel de la, brother of the preceding, a Spanish general and statesman, born in Madrid in 1794, fought in early life against Napoleon and the revolted Spanish colonists in South America, and afterward against Don Carlos; represented the city of Cadiz in the cortes, gave his support to Maria Christina and Isabella, and successively to the administrations of Espartero and Narvaez, and officiated in 1843 and 1844 as captain-general of Valencia, Murcia, and Catalonia. In 1847, during the complications with Portugal, he was put in command of 6,000 men, and took possession of Oporto. In the same year he escorted Maria Christina to Paris, and on his return to Madrid resumed his seat in the cortes, where he was a conspicuous member of the ultra conservative party. Subsequently he was reappointed captain-general of Catalonia. Having issued at the end of 1853, in concert with O'Donnell and Bravo-Murillo, the famous protest against the policy pursued by the government, he was banished from Spain after the revolution of July, 1854, and repaired to Paris; but was soon recalled to Madrid by the outbreak which terminated in the exile of Maria Christina, the downfall of Narvaez, and the restoration of Espartero. Gen. Concha was now made inspector-general of cavalry and marshal, and confirmed in these positions by O'Donnell's administration, which superseded that of Espartero, July 12, 1856; but on Oct. 12 following, when Narvaez came again into power, he was compelled to relinquish them. The subsequent change of the ministry reinstated him in his position, and Gen. Concha is now (Jan. 1859) one of the members of the Spanish senate, of which he was recently appointed president.

CONCHIFERA (Latin *concha*, Gr. κογχη, a shell, and *fero*, to bear). This class of the mollusca includes all the bivalve shells, and is familiar to all under the form of oysters, clams, scallops, &c. They are next to the univalves in variety and importance, and are invariably aquatic. They are all inhabitants of the sea, excepting a few widely-scattered genera, live on every coast, and are found in every climate. The shells of the bivalves are united at the back by an elastic ligament and articulated by a hinge, which is sometimes furnished with teeth shutting by the side of each other and acting much like the common butt hinge. The valves are closed by strong muscles which pass from one valve to the other, and when these are relaxed, the shells open spontaneously by the contraction of the cartilage. After the death of the animal, when the muscles lose their power, owing to the elasticity of the ligament the valves gape wide, more so than during the life of the mollusk. (See CONCHOLOGY.) The mantle, which is a conspicuous part of the animal, is a broad membrane which lines all the interior of the shell and encloses the whole body. Its edges are more or less fringed, and are either free, partly united, or entirely so, excepting a passage for the foot before and for the siphons behind. The foot is a muscular mass which may be protruded from the shell, and serves as the organ of motion. In nucula and some others the foot is deeply cleft, and capable of expanding into a disk like that on which the snail glides; while in the mussel, pearl oyster, and others, which habitually spin a byssus or thread of fibres by which they attach themselves permanently to substances, the foot is finger-like and grooved, and serves only to mould and fix the threads of which the byssus is composed. The branchiæ or gills are arranged somewhat like ruffles behind the foot, enveloping the abdominal mass. These are the respiratory organs, but they serve also another and very important purpose. Firmly fastened to rocks and other substances, or at best moving slowly and awkwardly in their muddy or sandy beds, these animals have not the power of following their prey, nor are they furnished with the means of seizing it, but the branchiæ convey to the mouth whatever particles the current brings, whether organic or inorganic, animal or vegetable: among these the mollusk lives. The water is furnished to the branchiæ by one siphon, while another serves as a passage for the excrement. The branchial siphon has its orifice surrounded by a double fringe. When unmolested, a current flows steadily into the opening of this siphon, while another current rises up from the exhalant tube. The burrowing species have a strong foot, with which they bore into the sand and clay upon the shore so as to entirely conceal themselves. They never leave these abodes, and often become fossilized in them. The teredo or ship-worm, and some other borers, which were formerly included among the univalves and multivalves, are now arranged in this class. The interior of the shell is marked with characters derived immediately from the shellfish, and affording a surer clue to its affinities than those which the exterior presents. The structure of the hinge characterizes both families and genera, while the condition of the respiratory and locomotive organs may be to some extent inferred from the muscular markings.

CONCHOID, a curve invented by Nicomedes in the attempted solution of the problem of doubling the size of Apollo's cubical altar.

CONCHOLOGY (Gr. κογχη, a shell, and λόγος, a discourse), the science which treats of the testaceous parts of the mollusca. Formerly these were made the basis for classifying the animals to which they belong; but the enlarged study, introduced by Cuvier, of the anatomical structure of the bodies contained within the shells, has developed an apparent want of correspondence between the latter and the organization of the more important parts, upon which the habits and true character of the animal must mainly depend. (See MOLLUSCA.) In the old classification, molluscous animals possessed of the same peculiarities of internal structure were widely separated by the differences of their external covering; some animals, as the cirripedia, comprising nearly all the old division of multivalves, were included with the mollusca because of their shelly covering, and thus they continued until their structure at last was found to refer them to the articulata; and some mollusca possessed of no shell, as the nudibranchs, would properly be excluded from the arrangement that comprised others hardly differing from them, except in being provided with this appendage, or perhaps but a poor apology for it. And then, as some species have the faculty of leaving and returning to their shells, it might occur, in ignorance of the relations of each part to the other, that the shell should be referred to one department and the body to another of the animal kingdom. Indeed, by reason of the changes of form and color that take place in the growth of some shells, the same species have been described at different ages of the individual under different names. But though the important divisions of the mollusca are now based on their internal organization, the study of the shells is nevertheless not to be neglected in the pursuit of the general science, malacology (or the study of the mollusca); for the minor divisions into species are still generally controlled by differences in the forms of the shell; and in the important department of palæontology, it is only the outer coverings of the ancient mollusca, or casts of these in more durable materials, that are presented to us, by which we may determine their character.—Shells consist of carbonate of lime secreted by the animal, and intermixed with some animal matter; they are usually heavier where calcareous formations prevail, the mollusca which bear them also being more abundant than in granitic and other districts deficient in lime. The secretion is first of an albuminous matter through the pores of the outer mantle of the embryo mollusk; this is generally succeeded by an admixture of crystalline particles of carbonate of lime; new layers form beneath these, and the shell gradually gains thickness and extension. In the species in which it is least developed it appears as a hollow cone or plate, which serves as a protection to the breathing organ and heart. The mantle it covers in other species is in part the same important organ. The protuberances and ridges seen on many univalve and bivalve s appear in the course of their growth by gin of the mantle turning out at a con- rable angle, and thus building up a plate his position for a certain distance. This growth then ceases, the mantle retracts, or be regarded as changing itself into the y layers, and then it extends in the origi- direction, carrying out the shell with it, till it turns again to form a second plate or ridge; and so the process goes on. The spines upon shells are produced by the mantle sending out from its margin tentaculæ, which secrete from their surface the calcareous matter, and thus form slender tubes. These become solid, as the fleshy matter, while it retracts and is absorbed, continues still to deposit the shelly layers. As successive layer in the growth of shells ends beyond the line of the next older layer, the edges of these must appear upon the outer surface as marked lines of growth. Many mollusks possess the power of altering and enlarging their shells to adapt them to their growth, which they appear to do as if by an intelligent will. Thus the murices remove the spines that interfere with the extension of the shell; and others enlarge the aperture, when it has become too contracted for the body, by wearing away or dissolving its walls. The growing cypræa removes the inner wall of its shell, and extending its mantle around upon the outside, adds there, in successive layers, more than was taken from within. The shell not only thus changes in size, but the form of the adult becomes altogether different from that of the young. The distinguishing marks of shells are the number of parts of which they are composed, and their peculiar forms and prominences.—They possess also different textures and various colors, often of great beauty. Some consist of a single piece, as those univalves which are not provided with the horny or calcareous operculum, such as is attached to the posterior part of the foot of other species, and which, when the foot is drawn in, serves to close the aperture as with a tight and perfectly fitting cover. In these the shell is in two pieces; so also is it in most of the bivalves, and the resemblance of the arrangement has led some conchologists to suppose that the operculum may be regarded as the equivalent of the dextral valve of the conchifera; but the anatomical structure forbids this conclusion. In the terebratula the shell is in 3 parts, and in some of the pholades and chitons it is in 4 or more. The peculiar forms of the aperture in some of the univalves are found to bear constant relations to the internal organization of the animal, and so far are therefore to be relied upon as indicative of its habits and character. Such are the grooved and notched siphons in some of the spiral univalves peculiar to marine mollusca, which breathe by two gills furnished with a fleshy tube for supplying to them the water. The textures of shells are described as porcellanous, pearly or nacreous, fibrous, horny, and some are glassy and translucent. These textures are produced by the different manner in which the particles of mineral and animal matter are arranged, which is best exposed when the shells are partially decomposed by the disappearance of the animal substance, a condition often met with in fossil shells. In some of them the complicated arrangement of the 3 strata of plates, which make up the porcellanous structure, is exhibited in the broken edges of the cypræas, cones, &c. The outer and inner layers present the edges of the plates to the surface, while those of the middle one lie in groups at different angles. Each plate is composed of minute prismatic cells, arranged at angles of 45° with the plane of the plate, and these meet the cells of the adjoining plates at right angles. The animal matter of the porcellaneous shells is soluble gelatine. The pearly shells are in alternating layers of very thin albuminous membrane and carbonate of lime, which by their minute undulations give the pearly lustre. This structure is the least permanent, and in some geological formations the shells that were provided with it have disappeared, leaving only their casts, while those of fibrous texture are preserved unchanged. This texture is produced by an arrangement of prismatic cells of carbonate of lime, which extend continuously through the successive layers that make up the shell. It is well exhibited in the heavy fossil inoceramus, which sometimes is found falling into fibrous blocks, the grain transverse to the surface of the shell. The oyster shell, in which the prismatic cells are irregularly arranged in the successive layers, separates into plates parallel with its surface—an example of laminated structure. In the brachiopoda the structure is so peculiar that it may be detected in the smallest fragment of shell; it consists of elongated hich is stretched by the closing of the valves, d an internal short fibrous one, which is compessed endwise as the valves are drawn togeer by the abductor muscles. As these are ed by death or otherwise, the shells are d partly open by the elasticity of the car-. The marks upon the inner surface of the s left by these organs are important features the description and classification of bivalve ells.—In the embryo of these animals the umnes are the first formed portions of their shelly vering. In most genera this is carried out ith the growth of the body, so as always to e as its complete protection; but in others attains to the extent of only a partial coverand in these instances other curious proviare made for completing the necessary nce. The teredos are slender worm-like that sometimes attain a length of and one species of even 8 feet. By close servation only are the two shells perceived the larger extremity of this long siphonal e. They cover the visceral organs, but between them in front the fleshy foot, ans of which the creature is able to burw into wood. Here he excavates long tubes ed to his form, and finishing them with oth calcareous lining, thus provides an al covering for the unprotected portion body. Securing himself permanently inner extremity, his communication withhereafter only through the siphonal tube. uolades burrow into limestone and other substances which are less hard and tenathan their own valves; other shells even penetrated by them. The front portion of ribbed like a rasp, and is thought to the purpose of one in forming cavities. whole shell is of unusual hardness, its strucre more resembling that of aragonite than calcareous spar. Being thin and without ligaments, it is strengthened by accessory valves on the dorsal margin. In some attached biv as the oyster, the embryonic umbo often the form of the surface to which the valve ened, and this form is afterward retained. the growth of the animal the original ield loses its importance, and as in the unies the spire, which corresponds to the umbo, often deserted, and becoming dead and brittle lls away (in which case it is said to be decolted), so in the bivalves the umbones wear out d the layers of shell scale off, leaving the sumit ragged and unsightly; in this condition ey are said to be decorticated. The freshater univalves and bivalves are especially subct to this erosion. The injury that might relt from this removal of the shell is obviated some cases by the deposit of new layers with- or by the construction of partitions, or, as in tubular shells, which continue to advance ward with the growth of the coral that enses them, by filling the deserted portion with lid calcareous matter. Some peculiarities of e shells of the other class of bivalves, the ACHIOPODA, have been given under this head. These valves are distinguished as dorsal and ventral, instead of right and left. The ventral is commonly the larger one, and is surmounted by a prominent perforated beak, through which the organ passes by which it is attached to foreign bodies. This valve resembles in shape the antique lamps, and the hole in the beak corresponds to that for the wick; they are hence known as lamp shells.—The class cephalopoda includes many genera whose shells are concealed within the soft parts. Many of these are known only as fossils, and nothing is left to indicate their former existence but the numerous stony pointed bodies and pens, which were at the same time the skeleton and partial receptacle of the soft portion of the animal. One of these calamary or squid-like fossils, belemnoteuthis, found in the Oxford clay at Chippenham, England, was so perfectly preserved that the muscular mantle, fins, ink bag, funnel, eyes, and tentacles with their horny hooks, were all distinguishable. A similar discovery, described by Buckland, is noticed in the article BELEMNITE. Some of the fossil ink bags found in the lias are nearly a foot in length, and are invested with a brilliant pearly layer; the ink forms excellent sepia. In the sepiadæ of this class the shell is the spongy calcareous substance known as cuttle-bone. It is a broad laminated plate as long and wide as the body in which it is enclosed. It grows to an extraordinary size, one being noticed by Banks and Solander in the Pacific near the equator, which was about 6 feet in length. To the same class belongs the nautilus pompilius, the only living representative of the order tetrabranchiatæ, of which full 1,400 fossil species are known, among which are the ammonites. Its light shell is separated into air chambers by numerous partitions, which greatly increase its strength and add but little to its weight. The 4 species of argonauts are also cephalopoda; their shell is thin and translucent like paper, and serves as a boat to the animal that sits unattached within, his long tentaculæ stretching forth from the projected head, and the short funnel beneath it forcibly spirting forth water, the recoil of which sends the animal backward. This is the shell which Aristotle called the nautilus, and fancifully described, as many others have since, under the name of paper nautilus, as floating in fine weather upon the surface with its sails spread to the breeze.—The whole number of species of molluscous animals known is estimated at about 12,000 recent and 15,000 fossil. Many of the living species furnish wholesome food, and some are esteemed as delicacies. The shells are principally composed of carbonate of lime, the other ingredients, of the oyster for instance, being 1.2 per cent. of phosphate of lime, and 0.5 of animal matter. They are, therefore, well adapted for being burnt to quicklime, used as calcareous fluxes in smelting ores, or applied as fertilizers to the soil. The marine shells, by the immense numbers in which they are produced, perform an important office in abstracting from the sea water its excess of calcareous matter, and thus aiding to maintain its purity. As objects of beauty, shells have always been admired, and frequently appropriated to uses as ornaments. Some varieties were used by the Athenians as ballots with the name upon them of the person to be banished, whence the term ostracism. Some shells, as the *cypræa moneta*, have served the purposes of coin among rude nations. Others, as the marine *avicula margaritifera* and the fresh-water *unio margaritiferus*, are noted for the pearls which are secreted between their valves around some foreign substance. Mother-of-pearl is the polished shell of nacreous structure. Rare species of shells are highly prized by collectors, and single specimens have been sold for exorbitant sums. Woodward ("Manual of the Mollusca," p. 16) cites the sums once paid for such, as 100 guineas for a *carinaria*, now worth only 1*s.*; 40 for a wentletrap, now worth 5*s.* The *conus gloria maris* has fetched £50 more than once, and *cypræa umbilicata* sold for £30 in 1850.

CONCHOS, or CONCHAS, a river of Chihuahua, Mexico, rises high up in the Sierra Madre, flows S. E., N. E., and then N., through a beautiful tract of country, comprising the richest of the table-land of Chihuahua, and empties into the Rio Grande near Presidio del Norte, after a course of about 350 m. It is the largest tributary of the Rio Grande, and very little inferior in size to that river itself. Its principal branches are the Florido, Buenavista, San Pedro, Chihuahua, and Balleza, which with their lesser tributaries water more than ½ of the state.

CONCINI, CONCINO. See ANCRE, MARSHAL D'.

CONCLAVE (Lat. *cum*, with, and *clavis*, key), the apartments where the cardinals of the Roman Catholic church assemble for the election of a new pope, or the assembly of cardinals shut up for such election. They are obliged to seclude themselves in compliance with a strict system of discipline which at once secures the privacy of their deliberations, and urges them to the orderly and speedy election of a new pontiff. Although the cardinals are free to name a place for the election, the conclave is held under ordinary circumstances in the Vatican or in the Quirinal palace at Rome. On the 10th day after the death of a pope, and the day following his burial, they assemble with their conclavists or attendants, 2 or 3 of whom are allowed to each. Little chambers or cells of boards, tapestried with green serge, camlet, or violet cloth, are erected on one side of a long corridor, illumined by a row of windows on the opposite side. The cells are numbered and apportioned by lot to the cardinals, the coat of arms of each being placed over the cell drawn by his name. The mass of the Holy Ghost is offered up in the chapel, and then all outsiders are dismissed, windows barred, doors padlocked inside and outside, and guards stationed all around the enclosure. All who remain within are solemnly sworn to observe the rules of the conclave, its restrictions, and its seclusion. No outdoor communication is allowed; food is passed in, after a careful search for concealed missives, through a wheel or drum similar to those found in the entries of cloistered monasteries. The fathers meet twice a day in the chapel for the scrutiny, as it is termed, being simply a vote by ballot. The votes are placed in a chalice on the altar, and when all have been deposited they are drawn and read aloud by 3 cardinals. The pope was formerly elected on more than one occasion by acclamation, but since the time of Gregory XV. the election by a ⅔ vote has prevailed. Out of consideration for the interests of the temporal dominion of the church, custom, now regarded as law, prevents the elevation of any but an Italian cardinal to the pontifical chair. When the pope is declared to be elected, and has signified his acceptance, a name is given him, he receives the fisherman's ring, is robed in the papal vestments, and receives the homage of the cardinals. The cardinal chamberlain proceeds to a balcony of the palace, and announces the election and the name of the new pontiff to the people. The new pope is enthroned at St. Peter's, and in due season he takes formal possession of the cathedral proper of Rome, the ancient basilica of St. John Lateran.

CONCORD, the capital city of New Hampshire, the shire town of Merrimack co., situated on the Merrimack river, about 50 m. from the Atlantic coast. It was originally the seat of the Penacooks, a powerful tribe of Indians. Passaconaway, a sagamore and a friend of the English, resided here. The place was settled in 1725, incorporated as Rumford in 1733, as Concord in 1765, as a city in 1853. Merrimack river divides the town N. and S., and the Contoocook winds along the western half of its northern border. At its confluence with the Merrimack is a small island, famous as being the place where Mrs. Hannah Dustin and her nurse, Mary Neff, with the aid of a boy, killed 10 Indians who had taken them captive from Haverhill, Mass., in 1697. Great water power might be furnished at Sewall's falls, in the Merrimack. At Fisherville, a village near the junction of the 2 rivers, there is also great motive power, partially improved by manufactories erected in Concord and the adjoining town, Boscawen. The soil is fertile. The Merrimack is bordered by wide intervales, which are overflowed by freshets. Extensive quarries of beautiful white fine-grained granite exist on the line of the Concord and Claremont railroad. Large quantities are exported to Boston, and from thence are shipped to southern ports for building purposes. Five railroads centre in the city. The Concord railroad connects with Nashua, Lowell, and Boston; the Portsmouth, with that city; the Concord and Claremont, with Bradford; the Northern, with Lebanon; the Boston, Concord, and Montreal, with Plymouth and Haverhill. The state house was erected in 1816, costing $80,000. It is built of granite hammered by the convicts in the state prison, which also is located in the city. It stands in a beautiful park, ornamented with shade trees. The centre of the building is 50 ft. front by 57 in depth; the wings are each 38 in front by 49 in depth; the whole making a parallelogram of 126 ft. in length by 49 in width, with the addition of a projection of 4 ft. in the centre of each front. There are 17 churches in the city, some of which are elegant structures. The city hall is also a fine building. The main village is situated on the west side of the Merrimack, well laid out, and rapidly increasing. The streets are shaded with elms and maples. The place has long been noted for its carriage manufactories. Vehicles manufactured there are to be found in every state of the union, in Canada, Mexico, Central and South America. Cabinet work, musical instruments, iron castings, tin ware, and printing are branches of business extensively carried on. There are 4 banks, with a capital of $350,000; also 2 savings banks. There are 5 weekly newspapers. The repair shops of the several railroads give employment to many mechanics. The state asylum for the insane stands on an eminence about 1 mile S. W. of the state house. The buildings are of brick, and well adapted to the purpose for which they were erected. A large farm is connected with the institution, and much of the provision needed for the inmates is produced by the labor of those able to be employed in the field. The whole number of patients admitted between 1842 and 1855 was 1,284, most of whom recovered their reason. The Methodist Biblical institute, for the education of young men for the ministry, was incorporated in 1847. It is near the north end of the main village, on a beautiful green. The building was formerly a Congregational church, but it was repaired and presented to the Methodist Episcopal church for its present purpose. Fisherville lies chiefly in Concord, and is a manufacturing village, having one mill 96 by 42 ft., 5 stories high, on the Boscawen side; another, 370 ft. in length, 3 stories high, on the Concord side, for the manufacture of cotton goods. There are other manufactories of various kinds. There is also a small woollen mill at the west village, beside various manufactories at Millville, a small village 2 m. S. W. from the main village. The town is abundantly supplied with water; beside the Merrimack and Contoocook, there are numerous brooks and 2 large ponds. Beside the public schools, there are several private schools which are well patronized. The city is increasing rapidly. The population of the main village is about 7,000. Pop. of the town in 1810, 2,398; 1820, 2,838; 1830, 3,702; 1840, 4,903; 1850, 8,584; 1858, about 11,500.

CONCORD, one of the shire towns of Middlesex co., Mass., was founded in 1635, and is said to have been planned in England. The Indian name of the place was *Musketaquid*, from a compound word signifying grass-ground. The name Concord is supposed to have been given to the English settlement "from the Christian union and concord among the first company," in the early days of the town. It is about 18 m. from Boston by the old county road, and 20 by railroad. It has had a prominent place in Massachusetts, and even in American history, from its foundation. The first inland settlement made in the Massachusetts colony, it was one of the scenes of the labors of the apostle Eliot. In the Indian wars it bore a prominent part, and in 1669 created a military company, which existed down to a recent period. It had considerable part in King Philip's war, 1675–'76. When the people of Boston overthrew Sir E. Andros, a company marched to their aid from Concord. To the wars that followed the English revolution, Concord contributed many men, to fight the French and Indians. Five Concord men fell in Lovewell's fight, an incident of much note in colonial history. To the expedition against Cuba, 1740, the place contributed 15 men, 12 of whom perished; and some of its inhabitants were present in Pepperell's army that reduced Louisburg. In the old French war the towns-people were very active. Such a community was not likely to be backward when the American revolution was commenced. The inhabitants as early as 1767 made themselves conspicuous for their opposition to the measures of the British government. Their action in town meetings was direct and bold, and defiant of the usurpations of the home government. The first county convention, that of Middlesex, was held at Concord, Aug. 30, 31, 1774, and consisted of 150 delegates, every town being represented in it. This convention adopted resolves that amounted to a declaration of separation, the last recommending the assembling of a provincial congress; and they were signed by 146 members. In September, some of the people took part in the expedition to Cambridge, to which town a British force had been sent. The judges were not allowed to hold the courts in the town, under the new government. Tories were arrested, and "humbled." Military companies were formed, and arms and ammunition purchased for their use. The provincial congress of Massachusetts met at Concord, Oct. 11, John Hancock presiding. In February, 1775, the colonial government provided for the accumulation of valuable stores for military uses at Concord, under charge of Col. James Barrett, of the town. The village had become a place of arms, and this determined the course of events. British spies visited the place, and an expedition from Boston, to seize or destroy the stores, was resolved upon by Gen. Gage. The provincial congress met at Concord the second time, March 22, 1775, and sat until April 15, when it adjourned, at the very time when Gage was drilling his soldiers for the expedition. On the night of April 18, a detachment of 800 men marched from Boston upon Concord (see LEXINGTON), which place they reached at 7½ o'clock on the morning of the 19th. The country had been thoroughly alarmed; the people were employed in removing and secreting the stores, and the military assembled to the number of 150. When the enemy came in sight, some were for resisting them; but as it was thought proper to throw the entire responsibility upon the invaders, this advice was not followed, and the militia fell back, slowly and sullenly, before the British, and took post upon the side of a hill to the right. They were at first under the command of Major John Buttrick, a descendant of one of the original settlers of the town; but Col. Barrett, his superior, soon arrived on the ground, having been employed in securing the stores, and ordered the men to cross the North bridge, which was done. The British now had possession of a large part of the town, and while some of them were engaged in destroying such arms and provisions as they could find, detachments were sent to secure the South and North bridges. A part of those sent to the North bridge went on to Col. Barrett's residence, where they were engaged in the work of search and destruction, when they were interrupted by the attack that was made on their comrades at the bridge. The Americans who had retreated over the North bridge were drawn up not far from it, and were joined by others from several neighboring towns. As it was believed the enemy were burning the village, the resolution was taken to attack them, and by Col. Barrett's command the militia and "minute men" marched toward the bridge; some of the Acton minute men, commanded by Capt. Isaac Davis, taking the head of the column, but standing abreast with the Concord minute men, Capt. Brown, when they halted at the W. end of the bridge. The British drew up on the E. bank of the Concord, and began to pull up the planks of the bridge. Major Buttrick, who led on the Americans, called to them to desist, and ordered his men to increase their pace. The British desisted, but fired several muskets, as signals, it was supposed; but when the Americans were 10 or 15 rods from the river, a single gun was discharged at them, the ball from which narrowly missed Col. Robinson, of Westford, who marched with Major Buttrick, and wounded Luther Blanchard, an Acton fifer, and Jonas Brown, a Concord soldier. Immediately a volley was fired, by which Capt. Davis and Abner Hosmer of Acton were slain. Major Buttrick then turned to his men, and gave the order to fire, discharging his own gun instantly. The order was promptly obeyed, and a general fusillade ensued, from both sides. The British lost several men, 2 killed, when they retreated, meeting reënforcements as they marched to the centre of the town. The Americans followed them, and took post on the side of the road by which they would have to return to Boston. The companies at Col. Barrett's were interrupted in their operations by the firing at the bridge, and returned to the village, without molestation. Those at the South bridge did the same. Meantime, the British had been engaged in acts of violence in the village, directed principally against military articles, such as throwing balls into wells, &c. The only building fired was the court house, which was not much damaged. Some indignities were offered to individuals, and there was a little pillaging. At about noon the retreat commenced, and the enemy were followed along the road to Lexington by the provincials, who inflicted much injury upon them. Concord had 5 men wounded in the action. So far as the deliberate purpose of the Americans was concerned, the event which is called the revolution was begun by the determination of the militia officers to march upon the North bridge; and the first order to fire upon the royal troops came from Major Buttrick. In 1835 a granite obelisk, 25 feet high, including the base, which is 5½ feet broad, was erected on the spot where the first British soldiers fell, with a suitable inscription. The grave in which 2 British soldiers were buried, supposed to have been the first who fell in the war, is hard by the monument. The spot is one of great rural beauty, the road along which the troops marched having been many years closed, and the bridge over which the first volleys of the revolution were exchanged having long since disappeared. During the war, Concord contributed largely of men and money to the common cause, and sent great quantities of fuel, hay, provisions, and clothing to the army. Though the population was but 1,300, it had 174 men in the army of 1775; and at later periods of the war its conduct was equally spirited. The money to pay the soldiers was raised by the town.—Concord is distinguished by its quiet beauty. The sluggish character of Concord river has prevented it from being turned to manufacturing purposes, and its natural beauties have been preserved. The Assabeth, which falls into it not far from the scene of the battle, is a stream of singular beauty, and both have been made familiar to the world by the writings of Thoreau and Hawthorne. The quiet and repose of the place have made it a favorite with men of letters. Ralph Waldo Emerson, grandson of the Rev. William Emerson, who was pastor there in the revolution, and an eminent patriot, resides there; and Mr. Hawthorne is one of its citizens. The "Mosses from an Old Manse," one of the latter's finest works, takes its name from the fact that it was partially written, and entirely arranged, in the parsonage house of the Rev. Dr. Ezra Ripley, who was pastor at Concord from 1778 to 1841. Perhaps no town in New England, of the same population, has had so many men in national and state offices. There are 2 religious societies in the town, both Congregationalist. There are 11 public schools, with an average attendance of 327. The town raises annually, by taxation, $3,500 for the maintenance of the schools. There is one academy with 80 pupils. The manufacturing pursuits are not extensive. The valuation of the town in 1850 was $1,[illegible].20. The population was 2,244 in 1855, and the number of voters was 441 in 1857. Concord forms a part of the 4th Middlesex senatorial district, electing one member of the state senate; and in connection with the towns of Lincoln and Weston forms the 10th Middlesex representative district, sending one member to the house. The Concord bank is situated there, having a capital of $100,000; and the office of the Middlesex mutual insurance co. The court of common pleas and the probate court for Middlesex co. hold sessions in the town. The court house is a large and handsome building, and stands on the site of one that was destroyed by fire in 1849. The town house is also a fine building, and was erected in 1850. There are several literary and charitable societies in the town, and one military company. It is an interesting incident in the history of Concord that Harvard college was removed there in 1775, when the college buildings at Cambridge were occupied by a portion of the American army then besieging Boston. The college returned to Cambridge in June, 1776.

CONCORDANCE, a book which contains all or the principal words that occur in the Bible, arranged in alphabetical order, with references to the book, chapter, and verse in which each occurs, designed to assist the inquirer to find any passage of Scripture of which he may remember one or more words. Concordances of the Hebrew and Greek texts have been made, and of the principal modern translations. The earliest concordances were of the Latin Vulgate, in the 13th and 14th centuries, the first being that of Antonius of Padua, and the second that of Cardinal Hugo de St. Caro. Euthalius of Rhodes made one of the Greek text about 1300, which was however lost, and the task was performed again in the 16th century, by Konrad Kircher for the Septuagint, and Betuleius for the New Testament. The former was improved by Tromm (Amsterdam, 1718), and the latter by Henry Stephens about 1600, and still further by Schmidt in 1638. The most recent Greek concordance is that of Bruder, Leipsic, 1843. The first Hebrew concordance was completed by Rabbi Isaac Nathan in 1438, was printed at Venice in 1564, and has been improved by Calasio (Rome, 1620), by Buxtorf (Basel, 1632), and by Fürst (Leipsic, 1837 *et seq.*). All the concordances, except the Hebrew, prior to the editions of the Bible by Robert Stephens (about 1550), which first contained the Greek and Latin texts divided into verses, made references only to chapters, and then indicated whether the passage was near the beginning, middle, or end of the chapter, by the letters *a*, *b*, *c*, &c. The first English concordance was of the New Testament, by Thomas Gybson, prior to 1540. The principal English concordances of the entire Bible are those of Marbeck (1550), Cotton (1640), Cruden (1737), Butterworth (1767), and George Coles (New York, 1856).—Similar alphabetical vocabularies of other books than the Bible are termed concordances, as the concordance to Shakespeare, by Mary Cowden Clarke, London, 1846.

CONCORDAT, a treaty or agreement entered into by the see of Rome with a secular prince or government, touching one or more points of ecclesiastical discipline. The Roman Catholic church is governed by her own laws and observances, in all matters not definitively settled by Christ or his apostles. (See CANON LAW.) Concordats are simply the arrangement by treaty of such laws and observances as lie outside the verge of divine law, the ecclesiastical power whereby similar laws and observances were established moulding and modifying them to meet the varying mutations of human affairs, and the different requirements of time and place. The name was first probably used in 1418, being applied to the stipulations entered into by Martin V. on the one side, and England, Germany, and France on the other. Late instances of concordats are those made with Austria in 1855, and with Würtemberg in 1857.

CONCORDIA, a N. E. parish of Louisiana, having the Mississippi river on the E., the Tensas and Washita on the W., and Red river on the S.; area, 790 sq. m.; pop. in 1855, 13,088, of whom 9,228 were slaves. Its surface is low, and inundations are consequently of frequent occurrence. There are many lakes and sloughs which occupy a considerable portion of the parish. The greater part of the land available for agriculture is laid out in cotton plantations. The productions in 1855 were 35,841 bales of cotton, and 438,700 bushels of Indian corn. Value of real estate, $5,230,500. Capital, Vidalia.

CONCORDIA, a Roman divinity of peace, in whose honor several temples were erected at Rome. The most ancient and celebrated of these temples was that built by Camillus, shortly before his death, on the declivity of the capitol, to commemorate the reconciliation of the patricians and plebeians, after the enactment of the Licinian rogations. Concordia was generally represented as a matron holding in her right hand an olive branch, and in her left hand a cornucopia. Her symbols were 2 hands clasped together, and 2 serpents entwined about a wand.

CONCORDIÆ FORMULA, the 7th and last symbolical book of the Lutheran church, in which the doctrinal development of that church was completed. The elector Augustus of Saxony, a partisan of Lutheran orthodoxy, made the 6th attempt to reconcile the stricter Lutherans, the milder Philippists, and the crypto-Calvinists to a common confession, when in 1576 he summoned the Lutheran theologians to meet for counsel in a convent at Torgau. The result of their deliberations, known as the "Torgau book," was submitted to the various German Lutheran churches, most of which, however, returned replies and criticisms instead of an unconditional assent. The elector therefore convened, on March 11, 1577, in the cloister of Bergen, near Magdeburg, the three eminent theologians, Chemnitz, Andreæ, and Selnecker, to revise the Torgau book. In their first session they prepared the *Epitome* and the *Solida Declaratio*, which were elaborated anew in April, and received their final form in a third session in May, to which Musculus, Cornerus, foundation of concrete, it is generally sufficient to place it in trenches from 1 to 2 ft. wider than the intended thickness of the walls, and it is advisable to remove the ground, if possible, till a tolerably firm and equable bottom can be found. If the building is large, or the natural soil is very bad, the whole of the space to be occupied should be dug out and replaced with concrete; and though it would be advantageous to obtain a good natural bottom, it is by no means essential; all that will be necessary will be to remove the soil to a convenient depth, and carefully level the bottom before filling it in.—Concrete has often been urged as a substitute for stone, brick, and other building materials, in constructions above ground; but all attempts of the kind have thus far proved failures. In every instance in which concrete walls have been used, more or less of damage has occurred, even during the process of construction, the lintels over the apertures of the first story often giving way before those of the second story have been laid; and breaches which were made through the solid walls reappearing shortly after they were repaired. Though gravel lying in a bed, and there confined without the means of escape, will support an enormous superincumbent pressure, yet the same gravel detached cannot be so laid as to form either solid upright walls or horizontal beams. Concrete has also been used, both as rough concrete and in the state of blocks, in the construction of river walls, breakwaters, &c., and its employment has been strenuously advocated on the grounds of economy in time, labor, and material. Constructions of this nature have occurred in England at Woolwich, Chatham, and Brighton, and a study of these works has developed some important facts, establishing particularly the ruinous effects of frost, as well as those of water, and showing conclusively that "in climates like that of England, in situations exposed to the alternate action of water and air, concrete cannot be advantageously used as a building material, the apparent economy caused by the cheapness of the material employed being more than compensated for by the frequency of repairs." The specific gravity of concrete may be compared with that of other materials as follows: Concrete weighs about 140 lbs. per cubic ft.; brick work, 110 lbs. per cubic ft.; and granite, from 160 to 170 lbs. —Beton, or Hydraulic Concrete, is prepared with hydraulic lime, and a different process is required in its manufacture. The lime is previously ground and slaked with water before being mixed with the gravel, and sufficient time must be allowed to insure the production of a perfect hydrate; it is then made into a mortar with the sand, and the stones afterward added. If the above precaution is neglected, and any particles remain unslaked, a subsequent exposure to water will cause them to swell and disintegrate the adjoining portion of the work. If the beton is to be used under water, and in circumstances which require a rapid setting, it will be advisable to add a portion of trass, pozzuolana, burnt clay, pounded bricks, &c. Treussart recommends the following formula: 30 parts of hydraulic lime, very energetic, measured in bulk, and before being slaked, 30 parts of trass of Andernach, 30 of sand, 20 of gravel, and 40 of broken stone, the latter if possible to be hard limestone; the mortar is first to be made and the stones and gravel added, after which the beton should be employed immediately; the above proportions will diminish in volume about ⅕ after manipulation. Or, if the Italian pozzuolana be used, the proportions should be 33 parts of energetic hydraulic lime, measured before slaking, 45 of pozzuolana, 22 of sand, and 60 of broken stone and gravel; this will require about 12 hours' exposure before being put in place. If burnt clay or pounded bricks are used, the proportions indicated for the trass should be adopted; they must not be employed, however, in works which are exposed to sea water. The expense of pozzuolana should be avoided whenever a sufficient period can be allowed for the setting of the beton. An excellent beton is formed by a mixture of gravel or broken stone with an equal quantity of mortar made of 3 parts of fine sand to one of hydraulic lime unslaked; we may even employ 1½ parts of the gravel to one of the mortar without injurious effects; the mortar should if possible be prepared in a pug mill, and mixed with the gravel by being frequently turned over on a platform, no water being added during the mixture of the mortar and gravel, and suitable precaution should be taken against the admixture of clay or other earths. The beton used by Vicat for the bridge of Souillac, upon the Dordogne, was composed of 26 parts of hydraulic lime in paste, 39 of granitic sand, and 66 of gravel; it was found to diminish in volume in the proportion of 1.31 to 1. The beton employed in the construction of the dry dock at the Brooklyn navy yard consisted of 1 part of hydraulic cement, 2 parts of coarse, clean sand, 3½ parts of broken stone, not exceeding 1½ inches in diameter, and 2½ parts of beach pebbles of about the same size. A mortar was first made of the cement and sand, into which the broken stone was thrown and well mixed, and the pebbles finally added; as soon as the mass was thoroughly incorporated, it was laid into its place in the work, when it commenced to set immediately, and soon became very solid and firm. It has been found very desirable in practice to employ broken limestone in the manufacture of both concrete and beton. This has been attributed to the affinity between the molecules of the already formed carbonate of lime and that which is undergoing the process of formation, as the new crystals might more readily form about bodies in a similar condition to that which they were tending to assume. Others again have supposed a tendency in the chemical elements to arrive *in equilibrio*, whence the carbonate of lime might part with a portion of its carbonic

Behind this embankment thus formed, the ground was dredged to a depth of over 6 ft., and the whole of this space filled up with a continuous mass of beton. The entire work was performed in 5 years, at a cost of less than $420,000, notwithstanding that the mole, at the time of the occupation of Algiers by the French army in 1830, was in a state of complete dilapidation, in spite of the extensive repairs which had been annually executed upon it by the Moors during a period of 2 centuries. The perfect success of this work establishes 2 very important points, viz.: that blocks of beton are sufficiently strong to resist the heaviest seas without injury, and form indestructible masses; and secondly, that these blocks are immovable when constructed above a certain size, determined by experiment at about 353 cubic ft. Marine works of the above character present numerous advantages over constructions in which natural stone is employed, of which the following are some of the most prominent: 1, immediate stability, while ordinary pierre perdue is never secure; 2, incomparably greater facility in transportation, which is always expensive and troublesome when blocks of stone are to be quarried exceeding 100 cubic ft.; 3, a considerable reduction in the sectional area of the pier, and consequent economy of cost; and 4, that the system can be applied in every locality, now that our advanced knowledge of the subject of hydraulic mortars enables us to manufacture beton in any place where it may be needed.

CONCRETIONS, Concretionary Structure. Among the strata of rocks formed by deposition of sediment it is a common thing to find lumps of material differing more or less in chemical composition from the strata in which they lie, and though separated from each other by short intervals, still arranged in layers conforming to the general stratification. The balls of argillaceous iron ore found in the shales of the coal formation are examples of these concretions. They have no regular form, but are generally flattened spheroidal masses, and are commonly called "kidney-shaped." In the clay beds of the tertiary group, in various parts of the country, are found curious collections of clay concretions, harder and more compact than the rest of the clay, and presenting forms in imitation of nuts, fruits, and different organic substances. The resemblance is so striking, that common observers are satisfied that they see actual relics and petrifactions instead of mere aggregations of inorganic matter. Through each one of these clay concretions a hole may be traced, which was at some time filled with a rootlet, the carbonaceous residue of which, if not the form of the root itself, may be observed. This appears to have been a nucleus around which the material collected, following the law of attraction by which neighboring particles of the same composition seek out and join with each other when in a medium that admits of their movement. In argillaceous deposits, even among the older stratified rocks, the same tendency appears to have obtained after the deposition of their materials. The calcareous portions separated from the shaly or sandy strata, and arranged themselves in these concretionary layers. But if the quantity of calcareous matter was sufficient to form a stratum of itself, this force appears not to have been exerted to produce the spheroidal masses; except occasionally the rock is said to have a concretionary structure, when it displays a tendency to form here and there along its course bunches or knots, as if these parts had curled and rolled over, presenting very much such an appearance as is observed in very gnarled and knotty wood. In the shales of the lower secondary in New York state, particularly in those of the Hamilton and Portage groups, numerous dark-colored calcareous concretions are found of extraordinary size and forms. They abound along the shore of Lake Erie, washed out of the banks by the action of the waves; and being found of suitable composition for the manufacture of hydraulic lime, they are collected and burned for this purpose. Their most common form is that of a flattened spheroid 2 or 3 feet in diameter and 6 inches thick. Prof. Hall mentions one he saw which was nearly spherical, and almost 6 feet in diameter. Very often they are formed about some nucleus of entirely different substance from their own, as a fossil shell or a nodule of iron pyrites; and the fossil shell not unfrequently has first served as a nucleus for an incrustation of pyrites, by which it was completely buried before both were concealed within the large concretionary mass. After the forming and hardening of the concretions, they appear to have cracked by shrinkage, the cracks sometimes radiating from the centre or taking other irregular directions. The cracks afterward became filled with light-colored clay or calcareous matter, and now appear like mineral veins. As the shape of these bodies often approaches that of the large sea turtles, and the seams resemble the divisional lines of the plates of the shell, they are very naturally supposed by most people who meet with them to be the petrified remains of this animal; and looking at those specimens deposited in the state collection at Albany, one may well suppose that this common belief will not soon be corrected. At Erie and other places in this part of Pennsylvania, concretions in a light blue limestone are found, which consist of a number of cones closely arranged side by side, and forming a thin layer not more than 2 inches thick, of which the flat base of the cones constitutes one side, and their points reach nearly through to the other. Little is known of the laws that have caused these matters thus to assume at different localities similar, and, as they appear, fantastic forms.

CONDÉ, or Condé-sur-l'Escaut, an ancient French town, in the department of Nord, near the Belgian frontier, 7 m. from Valenciennes, pop. 5,110, noted for its arsenal and fortifiweeks. This reinstated him with the king, but not sufficiently to make the latter support him as a candidate for the crown of Poland after the abdication of John Casimir. In 1672, on the outbreak of the war against the United Provinces, Condé was placed at the head of one of the armies which invaded the Netherlands, and was wounded in the arm at the crossing of the Rhine. He afterward opposed William of Orange, whom he fought at Senef, Aug. 11, 1674, with doubtful success. The next year he was called to Alsace to command another French army which had been entirely disorganized by the death of Turenne; he restored order, and drove Montecuculi beyond the Rhine. This was his last triumph, the infirmities consequent upon his long campaigns forcing him to retire. He repaired to Chantilly, where he was surrounded by a crowd of followers; here also he frequently received the most illustrious poets of his time, Racine, Molière, Lafontaine, and Boileau. In his latter years, he was especially fond of the society of Bossuet, who was his spiritual adviser, and whose funeral oration describes in a most eloquent manner the military life and Christian death of the illustrious warrior. See Lord Mahon's "Life of the Great Condé" (London, 1840); Lemercier's *Histoire du grand Condé* (Tours, 1844); and Voivreuil's *Histoire du grand Condé* (Tours, 1847.) III. LOUIS JOSEPH DE BOURBON, prince de Condé, the 4th descendant of the great Condé, born at Chantilly, Aug. 9, 1736, died in Paris, May 13, 1818. He was 8 years old when his father, the duke of Bourbon, late minister of Louis XV., left him an orphan. He distinguished himself during the 7 years' war, especially at the battle of Johannisberg, Oct. 30, 1762. His life during the revolution was marked by many acts of munificence and liberality; but after the taking of the Bastile he was among those who at once emigrated, and, with the count d'Artois, organized on the banks of the Rhine the French emigrants, afterward styled *armée de Condé*. This body, in concert with the Austrian army with which it was incorporated, took an active part in the campaign of 1793 on the banks of the Rhine. In 1795 the prince entered into secret negotiations with Pichegru, who was in command of the republican French army, but without success. The army of Condé, increased to 10,000 men in 1796, received their pay from England, although continuing to operate with the Austrian troops. After the peace of Campo Formio in 1797, Condé repaired to Russia, and took part with the Russians in the campaign of 1799 in Switzerland; afterward with the Austrians in that of 1800; and finally retired to England, June, 1801. On the restoration he returned to France with Louis XVIII., who appointed him colonel-general of the infantry and grand master of the royal household. He resided at Paris in the Palais Bourbon, but more frequently at Chantilly. He wrote *Essai sur la vie du grand Condé*, which was reprinted in the *Mémoires de la maison de Condé*, published by Sévelinges, 1820, 8vo. IV. LOUISE ADÉLAIDE DE BOURBON, a daughter of the preceding, born at Chantilly, Oct. 5, 1757, died in Paris, March 10, 1824, was distinguished for her piety. Having emigrated with her family during the revolution, she became a member of the Carmelite nunnery of Turin, and took the veil, Sept. 27, 1797, at a convent in Switzerland. On the arrival of the republican army in that country, she fled to Russia, and eventually found a refuge at Warsaw. When she heard of the death of her nephew the duke of Enghien, she repaired to England to comfort his father, and from 1815 to the time of her death she resided in Paris, where the king presented her with the *maison du temple*. She established here the religious order of the *adoration perpétuelle*, of which she had been a member during her stay at Warsaw, under the name of Marie Louise de la Miséricorde. The letters written by her in 1786–'87, to M. de la Gervaisais (an officer for whom, in her early days, she had conceived a Platonic love), were published by M. Ballanche in 1834.—The last of the Condés was found hanged in his room, Aug. 27, 1830 (see BOURBON, LOUIS HENRI JOSEPH); and in his person the family became extinct, after an existence extending over 3 centuries.

CONDE, JOSÉ ANTONIO, a Spanish orientalist and historian, born at Paraleja in the province of Cuenca, died in Madrid in 1820 or 1821. He was educated at Alcala, applied himself with great enthusiasm to the study of the Arabic and other oriental languages, and obtained an employment at the royal library of Madrid. Joseph Bonaparte appointed him chief librarian. When the French were driven from Spain, he was compelled to take resort to flight in consequence of the sympathy which he had displayed in their behalf, and repaired to Paris, but subsequently he returned to Madrid. His literary reputation rests principally on his *Historia de la Dominacion de los Arabes en España* (Madrid, 1820–'21, 3 vols. fol., with plates; Paris, 1840, 8vo.), of which a French translation by Marlès, and a German translation by Kuttschmann, appeared in 1824–'25, and an English translation by Mrs. Jonathan Forster in 1854. In the preface to his "History of Spanish Literature," Mr. Ticknor refers to the modest worth of this scholar, and expresses his gratitude for the benefits which he derived from his instruction while at Madrid.

CONDENSER, an instrument in which, or by means of which, particles are made to assume a more dense form. The condenser of a steam engine, or of a distilling apparatus, is the vessel in which the vapors are collected and reconverted to a liquid state. Of an electrical machine, it is the instrument by which the electricity is gathered and held—a large quantity upon a small surface. Of a pneumatic apparatus, it is the syringe or force pump by which much air may be compressed into a small space.

CONDER, JOSIAH, an English publisher and author, born in London, Sept. 17, 1789, died Dec. 27, 1855. In 1814 he purchased the lissement of the same name in the depart- of Gers, situated on the river Bayse, is here crossed by two bridges; pop. in of the arrondissement 70,367, and of the 7,553. It has manufactories of cotton, fabrics, and earthenware, and carries on c trade with Bordeaux in agricultural pro- Bossuet was for some time bishop of m; Dupleix and Salvandy were born there.

NDOR (*sarcoramphus gryphus*, Linn.), a bird of prey, belonging to the order *ac-* *s*, family *vulturidæ*. In the genus *sar-* *phus*, which includes two species, both ar to the American continent, the bill is ate, covered for about ⅓ of its length with cere, and arched to its strong and sharp he nostrils are large and exposed in the of the cere, and in the male furnished caruncle; the wings are long and point- th the 3d and 4th quills equal and the t; the tail is moderate and even at the the tarsi are plumed below the knee, and d with small reticulated scales; the toes derate and united by a slight membrane; nd toe is the shortest and is weak; the are strong and slightly curved; the head, and front of the breast are bare of feathers, vered with a hard, dry, and wrinkled skin, a few short, stiff, and dark-colored hairs. summit of the head, in the male only, is y or cartilaginous crest, extending over osterior part of the beak, and sloped an- y so as not to cover the nostrils; this unlike that of the gallinaceous birds, is with very few vessels, and incapable of on. The head is flat; the beak whitish at , and brownish at the base. The rough f the head and neck is formed into folds, hat as in the turkey, which may be d out at pleasure; these wrinkles arise the habit of contracting its neck within llar. The naked neck is separated from thered body by a collar of fine and white down; this collar is found in the adults h sexes. The general color of the plu- is brownish black; the primaries are black; condaries are nearly half white, so that, males especially, the wing is adorned white spot, which has led some natural- to the erroneous belief that the back is from the appearance of this color when rd is hovering below the observer. The rs are not so thick on the under surface body, but those of the thighs are long. ost extravagant ideas prevailed concern- e size of the condor until the visit of Hum- to South America. The average length s bird, from the point of the beak to the the tail, is not more than 3½ feet, and read of the wings from 9 to 10 feet; some luals, from favorable circumstances, may an extent of wings of 13 or 14 feet; so e condor is not larger than the lammer- of the Alps. The exaggerated accounts of have doubtless originated from the diffi- f accurate observation in the solitary and almost inaccessible retreats which the condor prefers; it is most frequently seen either perched upon a lofty mountain peak, or soaring at an immense height. With this idea of its gigantic size, it is natural that travellers should believe and report tales of its strength and ferocity in attacking and carrying off man and large animals. Its beak and claws are very strong, but are employed in tearing dead rather than living animals. Humboldt could not ascertain that these birds had ever carried off a child, and believes that the reports of their killing young persons are as fabulous as those concerning the great noise made in their flight; still, with their great strength, there is no doubt that condors might destroy children and even man; they are often seen to attack young bulls and tear out their tongue and eyes; nevertheless, the natives of the Andes uniformly assert that they are not dangerous to man, and even leave their young children asleep in the open air without fear of their being carried off. The condor belongs exclusively to the chain of the Andes, from the straits of Magellan to a few degrees north of the equator. The bird called condor in Mexico and Central America, and intimately connected with the mythology of the Aztecs, is the other species of the genus (*S. papa*, Linn.), the king vulture. Condors generally live in pairs, in the most elevated and solitary localities; from these they descend into the valleys and plains in search of food, generally the carcasses of large animals; they ascend and descend without apparent exertion, and sail in large and majestic circles at immense distances above the earth. When gorged with food, they retire to their ledges to digest it. As summer approaches, they seek the most inaccessible crags to rear their young; the female makes no nest, but deposits two white eggs, about 4 inches long, upon the bare rock. The claws of the condor are nearly straight, and it prefers alighting on the ground to perching in trees. They often hunt in pairs, and two will not hesitate to attack the largest animals, pursuing them and tearing them with beak and talons until they expire; in the province of Quito much mischief is done to cattle and sheep by these birds. There is no doubt that the condor detects its prey almost entirely by the sense of vision; when stimulated by hunger, it flies to a great height for the purpose of taking in at a glance a vast extent of country. From its large and exposed nostrils, as compared with the smaller and covered ones of the birds preying exclusively on living animals, it is possible that it is to some extent guided to its favorite food by the sense of smell; but, from the careful experiments of Audubon with other species of vulture, it is most likely, as he suggests, that the large openings of the nostrils are for the purpose of permitting the bird to clear out this avenue of respiration while its beak is plunged into the filthy matters which it devours with such gluttonous avidity. From the inactivity of the condor when gorged with food, has arisen the favorite native method of taking it alive; and European witnesses of the sport have thus been enabled to observe its habits of feeding. A horse or cow being killed, the condors soon make their appearance and attack the carcass with the utmost voracity, beginning with the eyes and tongue, their favorite morsels; in order to arrive the quickest at the intestines of the animal, they direct their principal efforts to the anus; when satiated and unable to mount, the Indians pursue and capture them with ease. In confinement they are mischievous and ferocious; they are very hard to kill, from the difficulty of penetrating their thick plumage, and they appear to have more tenacity of life than any other birds of prey.—The second species of the genus, the king vulture, above mentioned, is about as large as a goose, and frequents more especially the plains of the Pacific coast of America from 32° south of the equator to 30° north of it; but it is most numerous in the torrid zone. The skin of the head and neck is of a bright red color, bare of feathers, wrinkled, with a few hairs on the occiput, and a frill of plumes below the naked portion of the neck large enough to conceal a great part of the head when the bird draws itself into its favorite contracted, half-inclined position. Between the nostrils rises a soft crest, indented like the comb of a cock, and terminating in wart-like protuberances. The general color of the plumage is white, hence the Spaniards of Paraguay called it the white crow; the wing coverts, wings, tail, a part of the back, the bill and the tarsi, are black; in some specimens the naked skin of the head and neck is variegated with tints of orange, purple, and red. The immature birds have much more black in their plumage. The king vulture resembles the condor in its habits; it is a shy bird, unless pressed by hunger and in the vicinity of carrion; it is said to build its nest in a hollow tree, and to deposit two eggs. It received the name of king vulture, because from its superior size and strength it readily put to flight the carrion crows and turkey buzzards when congregated about a carcass upon which it desired to feed.

CONDORCANQUI, José Gabriel, a Spanish American, who, in 1780, incited the Peruvian Indians to rebellion against Spain, assuming the name of one of the incas, and professing a design of restoring the dynasty of Manco Capac. For 3 years the contest raged with doubtful success; at length, however, the natives fell away from him, and he was taken and executed.

CONDORCET, Marie Jean Antoine Nicolas Caritat, marquis de, a French savant, born Sept. 17, 1743, at Ribemont, near St. Quentin, died at Bourg la Reine, March 8, 1794. He received his education at the college of Navarre, and, being introduced as a youth of 19 years to the court of Louis XV., his strict morality and earnest love of science kept him pure from the pernicious influences of that dangerous region. At the age of 26 his essay *Sur le calcul intégral* was followed by his election to the academy of sciences, of which in 1777 he was elected secretary. His ingenuity in handling the most difficult mathematical problems was equalled by his graceful versatility. In 1777 a premium was awarded to him by the Berlin academy of science for his theory of comets. An intimate friend of Turgot, Condorcet made himself familiar with the systems of political economy; at the same time he became an active contributor to the *Encyclopédie* of Diderot and D'Alembert. With his sympathies for human freedom, he was a zealous advocate of the cause of the American colonies, and of the gradual emancipation of negro slaves, to be preceded, however, by their education. The French revolution found him, although belonging to the higher ranks of nobility and a friend of the duke of Rochefoucauld, among the defenders of the popular cause. To his fame as a mathematician he now added that of an excellent political writer. The same boldness of thought which had distinguished his scientific researches, characterized his political pamphlets and speeches. While in his *Feuille villageoise* he explained the fundamental principles of politics and public economy in plain and lucid language, adapted to the understanding of the masses, he rivalled the best orators of his time in his speeches as a member of the legislative assembly. The speech in which, after the attempted escape of the king, he represented monarchy as an anti-social institution, was admired as a model of eloquence and conclusive argument. He was elected secretary, and, in 1792, president of the legislative assembly. The address of the French people to all nations of Europe on the abolition of monarchy was written by Condorcet. As a member of the national convention, he sided with the Girondists or moderate republicans. When the king was impeached by the convention, Condorcet voted for the severest penalty short of capital punishment, the total abolition of which he had always advocated. To him was intrusted the work of preparing a new constitution, but the downfall of the Girondists (May 31, 1793) prevented its completion. Nothing daunted by the reign of terror, he energetically denounced the extreme measures adopted by the committee of public safety. Indicted as an accomplice of Brissot (Oct. 3), he retired from public notice to save his life, and was in consequence declared an outlaw. For months he was secreted by a generous female friend of his, Mme. Vernet. During that time he wrote his *Esquisse d'un tableau historique des progrès de l'esprit humain*; and in acknowledgment of the generosity of his friend, he wrote the *Lettre d'un Polonais exilé en Sibérie à sa femme*. When by a stray newspaper he learned that all who sheltered outlaws were to forfeit their own life, he left his asylum in spite of the earnest entreaties of Mme. Vernet, fled from Paris in disguise, and wandered about for some time until starvation compelled him to ask for food in a tavern at Clamar (March 27, 1794). Unhappily, he met with a member of the local revolutionary tribunal, who had him arrested and committed on a vague suspicion without even knowing his name. The next morning he was found in his prison a corpse. The general opinion is that he voluntarily put an end to his life by a dose of poison which he had carried with him for some time, thus fulfilling a prediction of Cazotte, related by La Harpe and others. His complete works have been edited by Garat and Cabanis (22 vols., Paris, 1809).—His wife, Marie Louise Sophie de Condorcet, a sister of Maréchal Grouchy and Mme. Cabanis, was born in 1765, and died Sept. 6, 1822. She took a lively interest in the philosophical researches of her husband, and wrote herself some works which are not without merit. She also translated Adam Smith's "Theory of Moral Sentiments" into French (Paris, 1798).

CONDOTTIERI (It. conductors), the common designation of adventurers who, principally in Italy, during the 14th century, kept bands of soldiers which, in the interminable feuds and wars of that time, they hired out to whichever party paid best. The burghers of the Italian municipalities, having by their control of the commerce with Asia become wealthy and prosperous, were slow to take up arms and risk their lives and fortunes for every petty quarrel with neighboring states. Hence they resorted to a means not unknown to modern commercial nations, that of hiring people to fight for them. Standing armies were not yet invented, and they hired these people, not for a certain term of years, but by the job. The condottieri, then, were a kind of contractors, who, when a war was brewing, made their bids accordingly, and if the contract was awarded to them, did the fighting and patriotism for the peaceful burghers. Having underbid one another to get a good job, they fell to practices not uncommon with contractors of other kinds of work; they increased their pay by plunder and booty not stipulated for. Beside, when the job was finished, they were loath to discharge their bands and return to private life until something else should turn up, but in order to keep their bands together they were compelled to fight and plunder on their own account. Thus they became a plague which there was scarcely any means to get rid of. There was a kind of good fellowship between the condottieri, which they observed even when fighting under different colors. When, therefore, one party was hired to put down another, the result generally was only a bloodless gladiatorial fight, the peaceable citizens being the only sufferers. Among themselves they had rules of warfare of their own. For instance, when they made a prisoner of their own class, they merely relieved him of the valuables he carried on his person and set him free without requiring ransom, while every outsider was made to pay heavily for his liberation. In the 15th century their wars were frequently mere shams. Thus, at a great battle near Zagonera (1423), there were only 3 men killed. Again, in 1467, a battle was fought near Molinella between the condottieri of the pope and those of Naples, in which there was not even a single man hurt. At last they became the most faithless and treacherous of men. Not unfrequently they changed their allegiance on the very field of battle when they were offered better pay by the enemy, nor did they hesitate to double or treble the price agreed upon after every real or sham victory.—In France, the bloody wars with England during the 14th century called forth something similar to the condottieri, the *compagnies grandes*. They plundered and devastated the whole country, and became an intolerable nuisance. The peasants of the southern provinces rallied under the name of *pacifères*, or pacificators, to put them down. They succeeded for a short time, but in 1361 the ruffians made their appearance once more under the leadership of Arnold of Cervole, and routed the royal army at Brignais near Lyons. They were finally persuaded by the constable Du Guesclin to enlist in Spain against King Pedro the Cruel, and did not return to France.

CONE, in geometry, a solid figure bounded by straight lines passing through a given plane curve, enclosing the base of the cone, and also through a point called the vertex of the cone, not in the plane of the base. When the base is a circle and the vertex directly over the centre of the circle, the cone is called a right cone. It will be seen that the mathematical cone is a figure of boundless extent. In popular usage, the part between the base and vertex is alone considered.—The name cone is also given to the fruit of the pines and larches.

CONE, Spencer Houghton, D.D., an American Baptist clergyman, born in Princeton, N. J., April 30, 1785, died in New York, Aug. 28, 1855. At the age of 12 he entered Princeton college, but two years later the infirm health of his father made him the only support of a large family, and he became Latin teacher in the Princeton academy. He afterward taught school at Burlington, N. J., but soon exchanged this position for a more lucrative one in Philadelphia, where he enfeebled his health by the combined labors of teacher, law student, and copyist. One of his friends, an Episcopal bishop, advised him to take orders in the Episcopal church, from which, however, he was withheld by the fact that he was a Baptist, and of a family which had been Baptist during many generations. The next advice of the bishop was that he should derive immediate advantage from his remarkable voice, and other superior physical qualifications, by going upon the stage. This he prepared to do, and in 1805 he appeared in the old Chestnut street theater, Philadelphia, and at once took eminent rank. For 7 years he followed this profession with great success, chiefly at Philadelphia, Baltimore, and Alexandria, being at that time almost the only American prominent on the stage, and therefore sharing the patriotic as well as dramatic sympathies of the public. In 1810 he intimated a design to abandon his profession; and in 1812 the lady to whom he was engaged refusing to marry him

ɜs limited by reservations to the bishop or
overeign pontiff. A priest is forbidden to
ge any thing disclosed under the seal of
ssion, even when questioned in a court of
e, under the severest ecclesiastical penal-
and he may not even speak to the penitent
sins he has confessed, outside of the con-
nal, without his express permission. Ac-
ng to Catholic theology, auricular or pri-
confession has been practised from the
of the apostles, although there has been a
ge of discipline since the early ages, adopt-
the church on account of a change of cir-
tances. Public confession was practised in
early times, and very severe and long
nces were imposed on those who were
of grievous sins. After the fervor of the
ages had diminished, and sins had become
frequent, these public confessions were an
ion of scandal, and the severe penitential
s were injurious rather than profitable.
rius, patriarch of Constantinople, abolished
ffice of public penitentiary in his cathe-
n the 4th century, and from that time pub-
onfession fell into disuse in the East. In
Vest, it was disused after the 7th century.
e confession was never required except
the sins were public, and the public con-
n of secret sins was only counselled in cer-
cases, as a penance. Many sins, especially
r the severe laws of Christian emperors,
l not have been publicly confessed without
ing the criminal to the penalty of death;
instance, murder, the adultery of a woman,
hat of a man with a woman of noble birth.
t sins were first privately confessed to a
t, and if the penitent desired to confess
publicly, the confessor judged whether
were expedient. Auricular confession is
mmended by some divines in the Anglican
Lutheran churches as a salutary practice,
wen by the prayer book of the church of
and.—For much curious information on
te confession in the church of England, see
ok called *Visitatio Infirmorum*, by W. H.
, M. A. Oxon., and H. Stretton, M. A. Oxon.,
on, Masters, 1850. For the Catholic liter-
and theology on confession, see Renaudot's
étuité de la foi sur les sacrements.

)NFIRMATION (Lat. *confirmo*, to strength-
held by the Roman Catholic church to be
rament which gives to the baptized Chris-
not only sanctifying grace, and the gifts of
Holy Ghost, but also special grace to con-
penly and courageously the true faith. It
ninistered by the imposition of the bishop's
s, and by anointing the forehead of the
ient with chrism. Confirmation is one of
sacraments which, according to the Catho-
ith, impress a distinguishing and inefface-
mark or character on the soul; and it can
ceived only once. The form pronounced
e bishop is: "I sign thee with the sign
e cross, I confirm thee with the chrism of
tion, in the name of the Father," &c.; af-
hich he gives the person confirmed a gentle blow on the cheek to remind him of the hardships he will have to encounter as a chosen follower and soldier of Christ. The words which accompany the rite in the Greek church are: "Behold the seal or gift of the Holy Ghost." In the Anglican church, confirmation is regarded as a rite supplemental to baptism, but not as a sacrament, and it is performed by the laying on of the bishop's hands.

CONFUCIUS, the Latinized name of the Chinese philosopher Kung-fu-tse (Reverend Master Kung), a man who stands in a relation to the peculiar civilization of China similar to that which Moses and Socrates combined hold to western civilization. He was born June 19, 551 B. C., in the small kingdom of Lu, which now forms a portion of the province of Shantung. Having lost his father when only 3 years old, his education was left to his mother, who seems to have cherished in him a strong sense of morality and directed his studies. At the age of 17 he entered the public service, but resigned it at the age of 24 in order to mourn the death of his mother for 3 years. During this time he devoted himself to a careful study of the ancient writings, the morality of which impressed him with the idea of restoring the former usages and the doctrines of the sages of old. Having prepared himself for this task, he set himself up as a teacher at the age of 30. His fame soon spread, and his scholars and admirers increased in numbers. In order to propagate his doctrines still more extensively, he visited neighboring countries, preaching and teaching wherever he went. About 506 B. C. he returned to his native country, where he was once more called into public office and attained the high position of prime minister. But he remained in it only a short time, the intrigues of a neighboring prince having succeeded in compelling him to retire into private life. Accompanied by a number of his disciples, he moved into the dominions of the prince of Wei, and devoted the rest of his life to the dissemination of his ideas. His death occurred at the age of 72, in 479 B. C., 11 years before Socrates was born. More fortunate than he, Confucius had during his lifetime already obtained an unbounded popularity, bordering almost on worship. Posthumous honors in great variety were conferred on him. He left a single descendant, his grandson, Tse-tse, through whom the succession has been transmitted to the present day. In A. D. 1671 there were 11,000 males alive bearing his name, most of them of the 74th generation. These descendants of Confucius constitute a distinct class in Chinese society.—Considering the vast number of those by whom the doctrines of Confucius have been and are implicitly taken as the highest authority, and the influence they have exerted on the entire social and political edifice of a nation comprising fully ⅓ of mankind, there is no founder of any religion who can boast of success greater than that of Confucius. He was not, however, the originator of a religious creed. While striving to introduce a ritual as minute

[illegible]

ly vascular organs, and those which receive the blood most directly from the heart, as the brain, the lungs, the liver, and the spleen, are the most frequent seats of congestion, together with the capillaries. Congestion differs from inflammation, to which however it may lead, in its anatomical characters: in the former the anatomical and vital characters are unaltered, and the *post-mortem* appearance of sanguineous accumulation may be removed by the action of water; but in the latter the redness is permanent, the consistence is changed, and various morbid products are effused; though congestion precedes inflammation, it does not necessarily proceed to it. There are certain conditions of the circulation in which congestion may be said to be normal and physiological, as for example, in the erectile tissue of the penis and other organs, and in the superficial capillaries of the blushing cheek. Andral makes 3 degrees of congestion: 1, in which an increased amount of blood is sent to a part; 2, in which in addition the capillaries are dilated, with retardation of the circulation, a tendency to stagnation of the blood, and darker color of the tissues; this is the true type of congestion; 3, in which there is complete stagnation of the blood, with a darker coloration. As the first of these degrees is less than congestion, as ordinarily understood, so the last is more than congestion, involving a new condition of the affected parts. As congestion is a commencement of disease in many organs, the functional disturbances arising from it are various. It is not always easy to ascertain the predisposing and exciting causes of congestion, though it may be stated as a general rule, that repeated stimulation of an organ or tissue predisposes it to congestion; inflammation in a neighboring part may induce congestion, as for instance in the lungs during inflammation of the air passages; an unequal distribution of blood from cold or other causes may cause pulmonary or other internal congestions. The redness and swelling are in proportion to the accumulation of blood; the heat and pain are trifling, unless the congestion be extreme; the distention of the vessels may end in their rupture, and in circumscribed or diffused hemorrhage, though effusion of blood may also occur from a diseased state of the fluid, as in typhus, scurvy, and the œdematous congestions of chlorosis, without rupture of the vessels. It appears from the experiments of Magendie, that a diminution in the proportion of fibrine in the blood, from any cause, predisposes to congestion; Andral noticed also a diminution of this element in many cases of cerebral congestion, beginning with headache, dizziness and bleeding at the nose, and ending often in coma and apoplexy. Congestions of the brain and spinal cord, if of long duration, or ending in hemorrhage, are highly dangerous and frequently fatal; the spleen is sometimes congested to the point of rupture, causing death without any premonitory symptoms. Frequent congestions of an organ bring on hypertrophy, ning, and a disposition to inflammation; re generally of short duration, and vary erity from the apoplectic congestion of rain to the simple swelling of a hemor- l tumor; their seat is very frequently ed in many hysteric females. The liver ost always more or less congested at the nt of death; this condition may exist in hole substance, the lobules presenting a uniform dark color throughout; or the s alone may be thus colored, the circum- e being lighter; in this, the 1st stage of c venous congestion, in which the hepatic are full and the portal plexus empty, the rance is due to the continuance of capil- ction after the general circulation has l; in the 2d stage, the portal as well as patic venous system is congested, and the cting cause may be either in the liver, in art, or in the general venous system; oc- ally the portal system is congested, the nal portions of the lobules being darkest d. A common form of venous congestion ds on deficiency of tone in the veins, which nts the normal ascent of the blood from wer parts of the body, thereby distend- e vessels and causing an accumulation of ; in this condition the serous parts of this are prone to escape, forming dropsical ef- s and anasarca. This inability of the to ascend against gravity is found in a variety of chronic diseases, the conse- es of improper food, unhealthy habita- or even the natural results of old age; ant of tone in the system is aggravated ers, gangrene, and effusions of blood and fluids into the cavities and tissues.—The nent of congestions is by blood-letting, diminishes the general mass of this fluid, pping and leeches, vigorously prosecuted ding to the importance of the affected or- he gravity of the attack, and the strength e patient; revulsives, as blisters, rubefaci- or the exhausting apparatus of M. Junod, d to distant and less vital parts, are pow- auxiliaries; in some cases compression of ading arteries is of great advantage. Pas- ongestions require different treatment ac- ng to their causes, whether mechanical actions to the circulation, or a general nic condition of the system; the latter are ited by tonics and stimulants, to correct iathesis which predisposes to the irregular bution of blood, and to assist the natural sses of cure by restoring its normal con- ion to the circulating fluid.

NGLETON, Henry Brooke Parnell, a British statesman and author, born July 76, died June 8, 1842. His father was Sir Parnell, chancellor of the Irish exchequer, was 2d in descent from the poet Parnell. ntered parliament at an early age, and for 35 consecutive years represented the con- ncies of Queens co., Ireland, and Dundee, e house of commons. In 1841 he was to the peerage as Baron Congleton. He belonged to the most liberal section of the whig party, and was a cabinet minister under the Grey and Melbourne administrations. In parliament he was distinguished by his financial knowledge, and by the active part he took in all measures relating to political economy. He was one of the first to advocate the repeal of the corn laws. He is the author of a number of treatises on the "Principles of Currency and Exchange;" the "Penal Laws against the Irish Catholics;" "Paper Money, Banking, and Over-trading;" "Financial Reform," &c. He suffered from alienation of mind in the latter part of his life, and died by his own hand.

CONGLOMERATE, in geology, a rock composed of rounded pebbles, such as are seen frequently forming a beach rolled by the waves. These fragments of older rocks, cemented together by a calcareous, silicious, or argillaceous paste, constitute a conglomerate, or, as it is sometimes called, a puddingstone. The pebbles may be of any size larger than sand; when composed of the latter, the rock is called a sandstone. Strata of this nature are found in all the geological formations of sedimentary origin. The most interesting example, perhaps, is the great conglomerate bed which forms the floor of the coal formation, and is composed of white quartz pebbles of all sizes, up to that of a man's head. The rock is traced beneath the coal formation of the middle states, and a similar one occupies the same relative position in England, where it is known by the name of the millstone grit. (See Anthracite.)

CONGO, a country of Africa, extending from lat. 6° to 8° 20′ S., bounded N. by the river Congo, E. by a range of mountains parallel to the coast, S. by the river Dando, and W. by the Atlantic ocean. Its greatest length is about 200 m. and its average breadth about 150 m. Numerous rivers descend from the mountains on its frontier and flow through it to the sea. Of these rivers the Rengo, the Ambriz, and the Lifanbe are the most considerable. The coast region of Congo is unhealthy because of its alluvial plains and forests, but the inland climate is comparatively salubrious. The soil produces in abundance an immense variety of tropical plants and fruits. Several species of grain unknown in Europe and America are grown on the banks of its rivers, the most valuable of which is the *luko* or *luno*, which yields a white and delicious bread. The principal products are, however, rice and maize, of which 3 crops are often raised annually. Of the forest trees the most remarkable is the baobab. The oil palm is also common to this country with all the regions of western Africa. Prof. Smith, in the expedition of 1816 to Congo, brought home to Europe 620 species of plants and flowers, 250 of which are said to be altogether new. The elephant, lion, leopard, zebra, gazelle, and antelope are the principal animals. The rivers are frequented by hippopotami, turtles, and crocodiles, with excellent fish, one of which, the *sparus*, often weighs from 30 to 60 lbs., and is of very delicious flavor. No domestic animals are employed as beasts of burden or in the performance of agricultural labor. Sheep and horned cattle are scarce, but goats, hogs, and poultry exist in large numbers. Among the reptiles are the boa, the chameleon, and the flying lizard or palm rat, which is deified by the natives. Ostriches, peacocks, and parrots are abundant. Some of the insect tribes are very venomous. The sting of the *banzo* is said to be mortal; the proboscis of the *insondi* penetrates the trunk of the elephant and inflicts madness and death. The imports are chiefly cloths, stuffs, carpets, and hardware and earthenware from Europe, together with fruits, grain, and different other kinds of American produce from Brazil. The exports consist principally of ivory, furs, and slaves, who were formerly shipped annually in large numbers to the western world. Congo was once exceedingly populous, but the ravages of the slave trade for 3 centuries have so wasted and diminished her people that the statements of the early Portuguese missionaries relative to its ancient populousness are now often discredited. The natives of Congo are of ordinary stature. Their color and features are less strongly marked than those of most other negroes, but they are both more indolent and less intelligent than the generality of their race. Polygamy is tolerated among them, but adultery is severely punished. Slavery is the penalty for all crimes save murder, the perpetrator of which is put to death. Whenever a chief dies, they kill a certain number of slaves proportioned to his rank, in order that he may have attendants in the other world. The people practise fetich worship. They are totally unacquainted with the plough, and prepare the ground for the seed by scratching it with a sort of hoe. The rights of property are rigidly observed among them, and its subdivision is sometimes carried to such excess that 3 or 4 persons will own a fowl or a hog between them. Society in Congo may be said to consist of the following classes: 1. The *chenoos*, or chiefs, and their families. The dignity of chenoo is hereditary only in the female line, and no son can succeed to it whose mother is not of chenoo blood. The chenoo is little distinguished from his subjects by his dress or dwelling. His sceptre is a small staff of black wood, inlaid with lead or copper. 2. The *mafooks*, who collect the revenue and carry on trade. 3. The *foomoos*, or farmers, who have houses and lands of their own, 2 or 3 wives, and a few slaves to work for them. 4. Fishermen and laborers, who have no property of their own. 5. Domestic slaves, who are said to be not transferable, except when guilty of some great crime. The kingdom of Congo is divided into several provinces, each of which has its *banza* or capital and chief, who owes feudal allegiance to a lord paramount at the capital, Congo-banza, or San Salvador. This potentate is styled the *lindy* of Congo; but, though once very formidable, he is now unable to check the encroachments of the provincial and village chenoos, and is every day becoming less and less capable of preserving the integrity of the kingdom. Congo was discovered in 1484 by the Portuguese, under the command of Diego Cam, who soon afterward made settlements and erected forts along its coast. The language is said to resemble that of the Caffres and Bechuanas.

CONGO, or ZAIRE, a large river of Africa, which flows into the Atlantic in lat. 6° S., long. 12° 40′ E. Before entering the ocean it expands into an estuary from 7 to 10 m. wide. At about 140 m. from its mouth narrows commence, and for many miles the river is not more than from 300 to 500 yards in breadth. Its banks now bristle with lofty, rugged rocks, ledges of which frequently cross its channel, forming rapids and cataracts. Above this rocky region it again gradually expands until it attains a breadth of over 4 m., and for about 100 m. its banks are covered with luxuriant vegetation. It is believed to be formed by 2 other great rivers which flow from the interior and unite their waters about 300 m. from the sea. Like the Nile, it overflows its banks during the rainy season and irrigates the adjacent districts. Its rise is generally from 7 to 12 feet. The velocity of its current above the narrows varies from 2½ to 5 m. an hour; but at its mouth it is much more rapid and powerful, and so deep that a line of 113 fathoms does not find bottom. This river forms the N. boundary of the kingdom of Congo, which it separates from Loango. It was once thought to be the Niger, but that idea has been dissipated.

CONGREGATIONALISM, a form of church polity, or a system of ecclesiastical organization, management, and control. Its correlatives are Presbyterianism, Episcopacy, Papacy. Its essential peculiarity is that it maintains the independence of each particular congregation of Christians, and their sufficiency to perfect and maintain their own organization, to elect and inaugurate their own officers, and, with and through those officers, to perform all needful ecclesiastical acts. Like every other system of church order, it may be connected with any form of doctrine and with any particular mode of worship. This polity in its general principle is adopted not only by those known as Congregationalists, but also by the Baptist denomination, and in this country by Unitarians and Universalists, and by some who hold the theological opinions of the Methodists. In the common, though more limited and strictly denominational sense in which it will be used in this article, the word Congregational designates a class of churches which hold in general that system of theology which was maintained by Augustine and Calvin, and which has been explained, advocated, and improved by the theologians of New England in their successive generations.—Congregationalists define a church to be an organization of professed believers, statedly meeting in one place, and united together by covenant for mutual watchfulness and edification, for the maintenance of divine wor-

the observance of Christian ordinances.
s no "Congregational church of the
States," but a collection of Congregation-
hes. Hence their efforts are not directed
. to "church extension" as to the multi-
ι and strengthening of churches. The
n given implies an organization, and
iere accidental assembly, composed of
s in Christ, who profess to be converts,
o give credible evidence of piety by
holiness; they become members by
and by mutual covenant, for the sake
y of the objects stated. Church mem-
their individual capacity, are reasonably
o as leaders in every good work; they
cted, as opportunity offers and an en-
d conscience dictates, to coöperate in
ry, educational, and reformatory enter-
In point of fact, these enterprises owe
ief strength and efficiency to the en-
d and conscientious support of Chris-
et a church in its organic constitution
t exist specifically for any such enter-
d is seldom called upon as an organiza-
ndorse or espouse specific measures of
olitical, or moral reform extraneous to
body. There is some difference of opin-
erning the relation of the baptized chil-
Christian parents to the church; but
versal usage is to admit them to full
ion only upon satisfactory evidence of
nversion and piety. A church thus de-
to be distinguished from the congrega-
ich includes all who meet in the same
n-communicants as well as the church;
e society, which is a legal term, denoting
pecially incorporated for holding real
nd providing for the expenses of the
and from the parish, a term nearly sy-
us with the two preceding words, but
es also used to mark territorial limits.
lso are derived such terms as church
s, pew-owners, and parishioners. It is
e an object with every church to gather
it a congregation from which it may re-
cessions to its ranks; but the society or
rganization is an unessential thing, and
matter of convenience. Congregation-
sist much on the competence of each
to elect its own officers, to regulate its
ncerns, to receive or reject candidates
bership, and to pronounce censure upon
of the brotherhood who walks disor-
nd on its independence, in these matters,
ictation from other churches, its alle-
eing due to Christ alone. Moreover, it
ciple of Congregationalism that in the
tration of church affairs the brethren of
ch have equal rights. Each male mem-
ll age is entitled to vote on all matters
; its interests.—The internal structure
gregational church is very simple. Its
re a pastor or pastors and deacons, the
ected from and by the church, and the
in these days, usually called from the
fice in some other church, or selected from candidates for the ministry who have a general recommendation from those already in the pastoral office, and who have made trial of their gifts in the pulpit to the satisfaction of the congregation. In the election of a pastor, it is usual for the church to nominate to the society, and upon their concurrence, an invitation is given to the candidate. Provision is made for his support, a revenue for this purpose being secured by subscription, or by a tax, or by the rent of seats in the house of worship. Upon his acceptance he is inducted into office by a council, being ordained if he has never been set apart for the work of the ministry, but otherwise only installed. It is usual also for churches to appoint a clerk annually to keep their records, and a committee of the brethren, who, in connection with the pastors and deacons, examine candidates for admission, inquire concerning cases of scandal, if any arise, and have a general oversight of the interests of the church. The pastor is the moderator of the church, the spiritual counsellor of its members, and its authorized teacher, who has entire control of the pulpit, administers the ordinances of baptism and the Lord's supper, and performs the marriage ceremony. The deacons are officially the almoners of the church charities, being specially charged with responsibility for the sick and needy, while, in consequence of their position and experience, they are naturally looked upon as the counsellors of the minister. Congregationalists hold to but one order or rank in the ministry, the deacons being only laymen. Licentiates are not ministers, but simply candidates for that work. Evangelists are ministers who preach and administer the ordinances, but who have no permanent place of labor. Missionaries are ministers sent to destitute places, or to foreign lands, after ordination. Ministers who are employed to preach to churches year by year without the formalities of an installation, are sometimes called stated supplies. The use of the terms bishop, overseer, and elder, to designate church officers, is not common in Congregational churches; but when they are employed, they denote simply the pastor of a church. In early times, the New England churches made a distinction between the work of a pastor, a teacher, and a ruling elder, and these 3 officers formed a presbytery in every church, whose concurrence with the brotherhood was necessary for the consummation of every church act; but for a long time the pastor has been the sole representative of this presbytery, and the distinction is known only as a matter of history. "The Congregational ruling elder is not to be confounded with the ruling elder of the Presbyterian church. The former was an ordained and ordaining minister, though he was not a professional preacher, and did not administer baptism and the Lord's supper." Congregationalists advocate and practise church discipline by means of admonition and rebuke, and an entire withdrawal of fellowship. This is done by the votes of the brethren,

after patient waiting and a full hearing of facts. Its design, so far as the offender is concerned, is to bear testimony against his fault, and to express to him in the kindest manner the conviction of the church of his danger if he fails to acknowledge and forsake his sin. So far as the church is concerned, an act of excommunication frees its members from responsibility for him whom they disown. Excommunication is attended with no civil dissabilities, and one who has been cut off may be restored to fellowship upon confession and repentance.—The liturgy of Congregational churches is as simple as their organization. The ordinary public service of the Sabbath provides for extemporaneous prayers, the singing of psalms and hymns, the reading of Scripture, and delivery of a sermon, written or unwritten. The order is modified when desirable, and the exercises close with the benediction. No audible responses are made as prayer is offered, but in theory it is silently accepted as the devout desire of each worshipper, while in song all may pour forth their hearts before God in vocal utterance. The custom in respect to posture during prayer and singing varies in different congregations. A form is used in the reception of members, in which usually their assent is asked to the covenant of the church and to the confession of faith adopted as the common expression of their views of Christian doctrine. Some Congregational churches have adopted a form of prayer for their own use in public worship, and congregational singing is now generally practised in churches of this order.—For the office of the ministry in the Congregational churches several things are requisite. A personal and experimental knowledge of divine truth is indispensable. To this must be added usually a liberal education and a familiarity with theological science. One having these qualifications, and desirous of becoming a preacher, may, upon examination by an association, be recommended to the churches as a candidate. If any church then elects him as pastor, and he accepts the invitation, a council is called to examine and ordain him. The services at ordination are performed by the ministers invited to the council, and include not only devotional exercises, but a special sermon; the ordaining prayer, in which the candidate is solemnly set apart for his office with the laying on of the hands of other ministers; the charge, in which he is reminded of the duties of his office; and the right hand of fellowship, which is given him in the name of the ministers and churches, with their Christian salutations.—Without admitting any right of churches to exercise authority and control over each other, Congregationalists seek to strengthen bonds of love and fellowship between all the churches of Christ, and especially between those of the same faith and order. Neighboring churches may be regarded as so many Christian families, having common sympathies and aims, desirous of promoting each other's welfare, ready to assist and advise as occasion may require, at liberty to suspend intercourse as a last resort, but not authorized to dictate measures or prescribe laws for each other. This mutual fellowship finds expression in various ways. The pastors of neighboring churches frequently exchange pulpits for a Sabbath; membership in one church is recognized as a ground of invitation to occasional communion with others; church members changing their residence are dismissed and commended by letter to other churches which they desire to join, and thus their connection is transferred from one organization to another. The censures pronounced by a church are also respected by those in fellowship with it. Any church may call a council by letters missive addressed to neighboring churches, to give advice. This step is customary at the settlement and dismissal of pastors, and at the organization of a church; and a council thus convened, consisting of a pastor and a delegate from each church invited, is regarded as a representative of all the churches. A member thinking himself aggrieved by church action has a right to demand a mutual council, and to designate half the churches to be invited; if his request is refused, he may call an *ex parte* council. Such councils dissolve when their business is ended. Occasionally, as in Connecticut, councils are more permanent bodies, and are called consociations, or perhaps conventions. Such bodies, however, should not be confounded with presbyteries, from which they differ both in their structure and in their powers. A presbytery is composed of representatives from church sessions; a consociation, of delegates from the churches directly. A church may at any time withdraw from a consociation without impairing its standing. The powers of a consociation are delegated and defined by the churches, and may at any time be curtailed or withdrawn, or the body itself may be dissolved without affecting the existence of the churches connected with it. In the Congregational system the particular church is the source of all ecclesiastical power and privilege. Sometimes neighboring churches unite in conferences for religious services and for reports of benevolent operations. Associations are in general composed of ministers, who meet for personal improvement and intercourse, and also to examine the credentials and attainments of candidates for the ministry, and recommend them to the churches. Sometimes associations include also a delegation from the churches, but without having authority in ecclesiastical matters. The general associations are state organizations, made up of representatives from the local associations, meeting annually, but not infringing upon the independence of the churches. They may recommend, but cannot speak authoritatively. Occasionally larger synods or conventions have been held, as at Cambridge, Mass., in 1648, at Saybrook, Conn., in 1708, and at Albany in 1852, for the purpose of promoting harmony and unity by the preparation of a platform of church discipline and a formal confession of faith, or of inaugurating measures for

re rapid development of Christian power
out the country. Thus Congregational-
d to the communion of churches, as a car-
rinciple; they recognize "one holy cath-
hurch, the communion of saints;" they
that no organization exists for itself
and that all are complete in one head,
is Christ, to whose authority all are sub-
They are not independent in the sense of
no fellowship with each other. "Those
dious men in England, who re-
e the conclusion that churches
, like those in the apostolic age,
independent of lords or com-
or of king or Cæsar, and equally inde-
of a supposed national church unknown
ew Testament and to the early ages of
ical history, were at first called Inde-
; and in England the Pædobaptist
independent of the state, and inde-
f any existing or imaginary church of
, have always been distinguished by
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circumstances have led to the general
the term Congregationalists.—The doc-
ght in the Congregational churches
be in accordance with the Scriptures,
espond in general with those taught in
les of the Church of England, and with
on and catechisms compiled by the
Westminster in 1643. It is cus-
for each church to have a summary of
in which its members are agreed, and to
the assent of candidates for membership
cted. These summaries differ greatly in
ness and in phraseology, and from time
may be modified to meet prevalent forms
r, and bear testimony to the truth. In-
as the inspired word of God is received
only perfect standard of belief and rule of
hurch creeds have not usually been em-
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f experimental religion. They are intend-
express, "not denominationalism, but
icity." Many of the churches of New
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t local churches, instead of one national
vincial church, *e. g.*, the 7 churches
a Minor; the right exercised in those churches of electing officers and teachers, as an apostle, Acts i.; deacons, Acts vi., 2 Cor. viii. 19; elders, Acts xiv. 23; also the right of administering ecclesiastical discipline, Matt. xviii. 15–18, 1 Cor. v. 3–5, 2 Cor. ii. 6–11, &c.; and an identity of bishops with presbyters, Acts xx. 17, 28. They find confirmation of their views, not only in the history of the apostolic churches, but in the course of events in the next century, according to the concessions of ecclesiastical historians of other denominations, such as Waddington, Mosheim, Neander, and Gieseler.—The influence of Congregationalism has entered most fully into the development of our national history, especially in New England and the Northwest. The Congregationalists, while claiming scriptural warrant for their polity, do not feel themselves troubled in making the admission that the discovery and practical use of their principles is of recent date. Relying on present evidences of life and truth in churches, they do not feel themselves bound to trace the visible links by which the ordinances have been transmitted to them since the apostolic days. In their view, each local church exists really and rightfully, not because it existed in a previous generation, but because it holds to the head, which is Christ, and is composed of men renewed and sanctified. He who would trace their history should go back 300 years, and examine the state of things in the established church of England when Queen Elizabeth's accession to the throne made her the supreme head of the church. The Puritan party in that church grew up out of an unwillingness to conform to usages which they esteemed idolatrous, such as the wearing of the surplice, the use of the sign of the cross, and kneeling at the communion. Persecution followed. Some of the Puritans disowned the church entirely, and became separatists; others adhered to it, protesting against its errors, and were simply nonconformists. Of the former class was Robert Brown, who in 1586 propounded a new theory of church government, more radical and exclusive than that which was afterward advocated by John Robinson, who is generally esteemed the father of modern Congregationalism. Before the close of the century the Brownists were numbered by thousands. In 1602, "several religious people" in the north of England, driven by their troubles "to see further into these things by the light of the word of God," determined to "shake off this yoke of anti-Christian bondage, and, as the Lord's free people, join themselves by covenant into a church state, to walk in all his ways, made known or to be made known to them, according to their best endeavors, whatever it cost them;" and, added Gov. Bradford nearly 30 years after, with touching simplicity, "that it cost them something, this ensuing history will declare." Over a portion of this church, which had been divided for the convenience of its scattered membership, Robinson was pastor, and in 1608 he went with it to Holland. There they remained

several years, until it became evident that a return to England was hopeless, and that Holland was not the place for their permanent home; and having great hope of advancing the kingdom of Christ by coming to this western world, they prepared for another removal. The church was again divided; the pastor remained temporarily with the majority in Leyden, and the colony took with them their elder, William Brewster, it being agreed that those who went first should be an absolute church of themselves as well as those who stayed. This young church, receiving Robinson's benediction at Delft Haven in 1620, was transported in the Mayflower to Plymouth, where the colonists, having first organized themselves as a civil body politic, landed, Dec. 21, literally "a church without a bishop, and a state without a king." Robinson died in 1625, before he could join them in America. This was the first church in New England. The first church formed in New England was that gathered at Salem, Aug. 6, 1629. The first settlers of Massachusetts Bay had apparently no intention at the outset of separating from the church of England, and their ministers were persons who had been episcopally ordained; but once in America, there was, as Robinson had predicted, but slight difference between the nonconformists and the Plymouth pilgrims. The same thing is true of the settlers of the Connecticut and New Haven colonies, who sought to be free, not from the Anglican church, but from its errors and corruptions. Notwithstanding the hardships involved in the planting and training of Christian churches in this new land, the Congregationalists who remained in England were even less favorably situated for extending their views of church polity. The civil commotions in the middle of the 17th century, and the persecutions and ridicule it encountered in the reign of Charles II., checked the growth of the system in its youth, while the distinctions of society and the disabilities resting on dissenters from the established religion have been a perpetual incubus upon it.—The Congregational ministry has been filled by well educated men. The earliest of them were graduates of the English universities. Some of them were men of rare attainments and scholarship. Harvard college was established at an early day, with special reference to the wants of the churches. Before 1640, 77 clergymen had left the pastoral office in England for the work of the ministry in New England, and 14 more, pursuing a course of theological study, had come here to complete it, and to enter the ministry. In 1665 the commissioners of Charles II. reported of the people of Connecticut, "that they had a scholar to their minister in every town or village." The Congregational churches of Connecticut down to the year 1832 had had 947 ministers, of whom all but 33 were regular graduates of some college. Among eminent men of this denomination it is sufficient to mention the names of John Milton, John Owen, Howe, Watts, Doddridge, J. Pye Smith, Harris, and Wardlaw; and in this country, the Mathers, the Edwardses, Shepard, Bellamy, Hopkins, Emmons, Dwight, Stuart, and Taylor.—The Congregationalists generally have carried their liberality so far as to neglect in great measure the extension of their polity in its pure form. Multitudes of them have gone into other ecclesiastical connections, by an easy transfer, in changing their residence, and particularly in emigrating westward. One branch of the Presbyterian family of churches has been greatly indebted to this largeness of spirit and lack of denominational zeal.—The present century has been distinguished for large and efficient plans of benevolent action. In many of these the Congregationalists have taken the lead, furnishing men and means without grudging. The census of 1851 showed that the Independents had in England and Wales (exclusive of the Baptists) 3,244 congregations, with an average attendance of 404,686; in Scotland, 168 congregations, with an average attendance of 57,466. In Ireland and the Channel islands there were 30 Independent congregations, and in the British colonies 144. The "Congregational Year Book," published by the Congregational union of England and Wales, contains lists of churches connected with county associations, and an alphabetical list of Independent ministers in Great Britain and the colonies. In the summary reported for 1854, it was stated that the number of British Congregational ministers and missionaries throughout the world was 2,400; Congregational churches in the united kingdom 2,300, and in the colonies 150; 13 colleges and theological academies, with 203 students; 26 periodicals conducted by Congregationalists. In France there is a union of evangelical Congregational churches, numbering 25 churches, with upward of 1,800 members, beside others unconnected with the union. There are a few churches of this order also in Belgium and Switzerland. Evangelical dissenters in England do much for the support of the London missionary society, which in the year 1854–'5 disbursed £65,078; of the British and foreign Bible society, payments £149,040; of the religious tract society, disbursements £84,[illegible]; and of other similar institutions. For "home missionary" purposes in England and Wales there was expended in the year 1854–'5, £12,987. The "Year Book" published by the American Congregational union for 1859, gives a list of ministers and partial statistics of the churches. There are not far from 2,700 Congregational churches in this country, with about 250,000 communicants. Beside a large number of colleges in whose administration this denomination takes an active part, it has theological seminaries at Andover, Bangor, New Haven, East Windsor, Oberlin, and Chicago. Congregationalists are associated with Presbyterians in the American board of commissioners for foreign missions, which expended in 1857–'8 nearly $350,000; and in the American home missionary society. They also unite with other denominations in several of the great national societies for promoting education and godliness. This is done, however, not as churches, but as individuals.—The writers and authorities upon this subject are numerous. Among more recent ones, in whose volumes will be found abundant references to the older, we mention Davidson on the "Ecclesiastical Polity of the New Testament;" Uhden on the "New England Theocracy" (written from a German standpoint and translated by Mrs. H. C. Conant); Clark's "Congregational Churches of Massachusetts;" Felt's "Ecclesiastical History of New England;" Cumming's "Dictionary of Congregational Usages and Principles;" Sawyer's "Organic Christianity of the Church of God;" Coleman's "Primitive Church;" Wellman's "Church Polity of the Pilgrims;" and the first 2 vols. of Sprague's "Annals of the American Pulpit."

CONGRESS, in international politics, an assembly of the sovereigns or plenipotentiaries of different states to determine questions and concert measures of common interest. It is of modern origin, the earliest important European congress having been that of Münster and Osnabrück, which assembled in 1644, and concluded the peace of Westphalia in 1648. The subsequent congresses of most general interest have been those of the Pyrénées (1659), of Nimeguen (1676–'79), of Ryswick (1697), of Utrecht, (1712–'13), of Aix la Chapelle (1748), of Teschen (1779), of Rastadt (1797–'99), of Erfurt (1808), of Châtillon (1814), of Vienna (1814–'15), of Aix la Chapelle (1818), of Carlsbad (1819) and Troppau (1820), of Laybach (1821), of Verona (1822), and of Paris (1856). The treaty which ended the war of the American revolution was concluded by the congress of Paris in 1782–'83; that which terminated the war of 1812 between the United States and Great Britain, by the congress of Ghent in 1814; and that which closed the war between Mexico and the United States, by a congress at Guadalupe Hidalgo in 1848. A complete history of European congresses would be a history of the politics and wars of Europe. The term congress is also sometimes given to literary and scientific associations, was applied to the national assembly of Belgium in 1830, and is the name of the combined senate and house of representatives which make the legislative branch of the U. S. government. (See United States.)

CONGRESS SPRING, the most popular of the Saratoga springs—whether owing to any greater medicinal virtues it possesses, or to the influence of fashion only, appears to be uncertain. One hundred cubic inches of the water yields 114 inches of carbonic acid gas. The solid contents in 1 lb. troy are thus given, according to the analysis of Schweitzer: chloride of ammonium 0.0362; chloride of potassium 1.6256; chloride of sodium 19.6653: iodide of sodium 0.0046; bromide of sodium 0.1613; carbonate of soda 0.8261; carbonate of lime 5.8531; carbonate of magnesia 4.1155; carbonate of strontia 0.0682; carbonate of protoxide of iron 0.0173; carbonate of protoxide of manganese 0.0202; sulphate of potassa 0.1379; nitrate of magnesia 0.1004; alumina 0.0069; silica 0.1112; total 32.7452 grs. According to Prof. Daubeny the temperature of the spring is 51° F., being, as he thinks, 3° or 4° above the mean temperature of the earth at this place.

CONGREVE, William, an English dramatist, born at Bardsey, near Leeds, in 1672, died in London, Jan. 19, 1729. He received his early education in Ireland, proposed to study law, but applied himself to writing for the stage. His first comedy, the "Old Bachelor," was received with great favor at the Drury Lane theatre in 1693. In the following year appeared the "Double Dealer;" in 1695 "Love for Love;" and in 1697 his tragedy of the "Mourning Bride." The opening line of the latter, "Music has charms to soothe a savage breast," has often been quoted; and Dr. Johnson considered the description of a cathedral, which occurs in the play, as the most poetical in the whole range of the English drama. His writings, however, have been severely censured for their licentiousness; but his comedies abound in witty dialogue and lively incident; they secured for him a high reputation, and the admiration of Dryden and of Pope, the latter of whom dedicated to him his translation of the Iliad. Disappointed, however, at the unfavorable reception of his last comedy, the "Way of the World" (1700), and worried by a contest with Jeremy Collier in regard to the moralities of the English stage, he became disgusted, and ceased to write plays. The munificence of his patron, Lord Halifax, had placed him morever in easy circumstances. The latter conferred upon him lucrative appointments in the public service worth £600 a year, and afterward he obtained the office of secretary for the island of Jamacia, which raised his emoluments to £1,200. Elated by his good luck, he wished to forget that he was an author; and when Voltaire waited upon him while he was in London, and took occasion to compliment his works, Congreve thanked him, but said that he would rather be considered a private gentleman than an author. "If you had been merely a gentleman," retorted Voltaire, "I should not have come to visit you." He was on the most intimate terms with the duchess of Marlborough, and bequeathed the bulk of his fortune, amounting to about £10,000, to that lady, who dedicated a monument to him, and showed her regard for him in the most eccentric fashion. He was interred with great pomp in Westminster abbey, the pall being borne by some of the most distinguished noblemen of England. Beside plays, his works comprise a romance and miscellaneous poems. A fine edition of his complete works, printed by Baskerville, appeared in Birmingham in 1761, a subsequent edition in London in 1788, and translations of his works were published in France and Germany.

CONGREVE, Sir William, inventor of the Congreve rocket, born at Woolwich, May 20, 1772, died in Toulouse, May 15, 1828. In 1804, being then an artillery officer, he invented the rocket, which was used for the first time against Boulogne in 1806. He rose to the rank of general of artillery, succeeded his father as superintendent of the royal laboratory at Woolwich, and was member of parliament successively for Gatton and Plymouth. He wrote an "Elementary Treatise on the Mounting of Naval Ordnance," 1812, and in 1815, a "Description of the Hydro-pneumatic Lock" for sluices and canals. He invented improved processes of manufacturing gunpowder, amalgamating metals, and printing bank notes, and gave some attention toward a new mode of propelling ships. It is said that, foreseeing a war in the East, he submitted to the British government two plans, the one to defend, the other to reduce Constantinople, according as England might side with or against the Turks. Having become implicated in some questionable financial operations in connection with a mining company of which he was a director, he retired to the continent, where he died rich. For some time previous to his decease he was deprived of the use of his limbs, but invented a locomotive fauteuil which enabled him to move about without aid.

CONI, or CUNEO, an administrative district of the kingdom of Sardinia, embracing the provinces of Coni or Cuneo, Mondovi, Alba, and Saluzzo; pop. of the district, 605,772; of the province, 180,767.—The town of Coni is connected by railway with Turin, distant 54 m. from that city, and is the capital of the above province and district; pop. exclusive of the garrison, 18,777. It is situated at the junction of the river Stura with the Gesso, a mountain torrent, and was a place of great celebrity and military importance until 1800, when its powerful fortress was dismantled by the French, after the battle of Marengo, and its site converted into promenades. It is now only defended by a wall. Coni has a cathedral, a handsome town hall, and other public buildings. The manufacture of silk and cotton is extensively carried on, and the city is a great agricultural mart.

CONIC SECTIONS, the name given to the plane curves formed by cutting a right cone by a plane, although these curves can be formed in many other ways. If the plane be parallel to the base of the cone, the section is a circle, or through the vertex, a point. Incline the plane to the base, and the section becomes an ellipse, or through the vertex, still a point. Incline the plane further until it makes the same angle with the base that the side of the cone does, and the section becomes a parabola, or through the vertex, one straight line. Incline the plane any nearer to a right angle with the base, and the section becomes a hyperbola, or through the vertex, two straight lines. It will be seen that the circle elongates into an ellipse, the ellipse at its utmost length becomes a parabola, and the attempt to lengthen the parabola brings in a second curve by the plane cutting that part of the cone which is above the vertex. The properties of the conic sections were investigated with great thoroughness by the ancient Greek mathematicians of the school of Plato. Four books by Apollonius of Perga on conic sections have come down to us in the original Greek, and 4 more in translations and abstracts. They are wonderfully full and accurate, and have left comparatively little for modern geometers to do in the investigation of the properties of these curves. Conic sections were in his day merely speculative theories; but after the lapse of 16 or 17 centuries it was discovered by Kepler that the orbits of the planets are ellipses, and from that time nearly all the most brilliant applications of mathematics to natural science and to the practical arts have been possible only through the use of conic sections. What was pure geometrical speculation among the Greeks, has proved of much practical advantage to us, the inheritors of their knowledge.

CONJUGATION (Lat. *con*, together, and *jugo*, to yoke, to bind), the inflection of a verb in order to indicate by various forms the different times and relations in which the action expressed by the verb may take place. The inflection is into voices, modes, tenses, numbers, and persons, and is effected either by affixes or prefixes to the unchangeable root, or in several languages by both at once.

CONJUNCTION (Lat. *con*, together, and *jungo*, to join), in grammar, an inflexible part of speech, showing the relations between words and clauses, and connecting them so as from simple to form compound sentences. They are the latest class of words in the development of language, forming the articulations of the members of a discourse, and are variously classified.

CONNAUGHT, the westernmost of the four provinces of Ireland, comprising the counties of Galway, Mayo, Roscommon, Leitrim, and Sligo; area, 6,862 sq. m.; pop. in 1841, 1,418,859; in 1851, 1,012,006. It is extremely rugged and mountainous except in the central part, and abounds in magnificent scenery, but the soil is the most barren in Ireland. A great part of the land consists of bog. It is drained by the Shannon and its affluents, and by numerous rivers of less note, which mostly take their rise from lakes and empty into the ocean. The coast is broken by many bays and inlets. The moral and physical condition of the people, though doubtless underrated, and now improving, is lower than in the other 3 provinces. The Irish language is commonly spoken, and the most abject poverty extensively prevails. The culture of flax has received considerable attention of late years, and several public works, prominent among which are the improvement of the navigation of the Shannon, and a railway from Athlone to Galway, are developing the internal resources of the province. Galway, Sligo, and Ballina, all seaports, are the chief towns.

CONNEAU, HENRI, a French physician, born at Milan in 1802. He studied at Florence, where for some time he was secretary to Louis Bonaparte, ex-king of Holland. Afterward he practised his profession at Rome, until the revolutionary outbreak in 1831 compelled him to remove to Marseilles, where he received a call from Queen Hortense. She placed great reliance upon his services, and recommended him to her son Louis Napoleon, whom he assisted in his escape from the fortress of Ham, and was himself imprisoned for some time in consequence. He afterward joined the prince in England, and after the revolution of 1848, followed him to France, and subsequently became first physician to the emperor, medical inspector of the imperial household, and almoner of the emperor and empress. He was made a member of the legion of honor in 1849, and promoted to the rank of commandant of this order in 1856. In 1852 he was elected to the legislature by the arrondissement of Péronne, and reëlected in 1857.

CONNEAUT, a post borough and township on Conneaut creek, Ashtabula co., Ohio, 2 m. from Lake Erie, memorable as the landing place of the first settlers of northern Ohio, in 1796, whence it is sometimes called the Plymouth of the Western Reserve. It has a good harbor at the mouth of the creek, with a lighthouse, contains a number of churches, schools, &c., and from the advantages of its situation is the centre of an active commerce. The surrounding country is extremely productive, and Conneaut is the entrepot for the produce not only of the adjacent parts of Ohio, but also of a considerable portion of Pennsylvania. Pop. of the township, 2,695; of the borough, in 1853, about 1,500.

CONNECTICUT, one of the 13 original states of the American union, and the smallest of the present states except Rhode Island and Delaware, derives its name from its chief river, the Connecticut, a name given to it by the Indians, and meaning in their language the Long river. It is bounded N. by Massachusetts, S. by Long Island sound, E. by Rhode Island, and W. by New York. The northern line, as originally run, measured 88 m., viz.: 41 m. E. of Connecticut river, and 47 m. W.; the eastern line, 45 m.; the western line, 72 m. by the indirect course near the southern extremity, or 68 in a direct line. The sea-coast, from the mouth of the Pawcatuck river on the S. E. to the mouth of Byram river on the S. W., is about 100 m. The average length of the state is 86 m., and the average breadth 55 m., making an area of 4,730 sq. m. It lies between lat. 41° and 42° 3' N., and long. 71° 55' and 73° 50' W. The state is divided into 8 counties and 160 towns; 4 of the counties border on Massachusetts, and 4 on Long Island sound. The towns first incorporated embraced a much larger extent of territory than at present, as from them, at various times, new towns have been taken and incorporated; but most of the towns in Windham and Litchfield counties, and some in Tolland co., more recently settled, embrace their original limits. The following table indicates the several counties, the date of their incorporation, their extent, population in 1850, number of towns, number of representatives to the general assembly, and valuation of property in 1857:

Counties.	Inc'd.	Sq. m.	Pop.	Towns.	Rep.	Valuation.
Hartford......	1666	750	69,967	27	40	$44,932,763
New Haven...	1666	570	65,588	24	30	46,111,593
N. London....	1666	620	51,821	19	28	29,551,655
Fairfield......	1666	620	59,775	23	31	37,357,062
Windham....	1726	560	31,081	16	24	11,814,522
Litchfield.....	1751	875	45,253	24	39	22,751,559
Middlesex....	1785	375	27,216	14	21	13,885,652
Tolland.......	1785	360	20,091	13	21	7,754,613

The cities of Connecticut are New Haven, Hartford, New London, Norwich, Middletown, Bridgeport, and Waterbury. New London was the first to apply for the corporate privileges of a city, and was incorporated in Jan. 1784. Hartford, New Haven, Norwich, and Middletown immediately followed, and were incorporated in May, 1784. Bridgeport was incorporated in 1836, and Waterbury in 1853. None of the cities except New London embraces the whole of the limits of the town of the same name. In some of the towns there are compact villages which are incorporated for certain municipal regulations, and called boroughs. Several of these have become extinct as boroughs, and Bridgeport and Waterbury have been made cities. They were incorporated: Bridgeport in 1800; Stonington in 1801; Guilford in 1815; Essex and Clinton in 1820; Danbury in 1822; Colchester and Newtown in 1824; Waterbury in 1825; Stamford in 1830; Southport in 1831; Willimantic and Clifton in 1833; Worthington in 1834; Humphreysville and Norwalk in 1836; Bethel in 1847; New Britain in 1850; Birmingham in 1851; Sharon and Wallingford in 1853; Danielsonville and Greenwich in 1854; and Winsted in 1858. Most of these are commercial or manufacturing places, or located near New York. The other large manufacturing villages are Meriden, Collinsville, Tariffville, Windsor Locks, Thompsonville, Bristol, Falls Village, Salisbury, West Killingly, Wolcottville, Naugatuck, New Hartford, Rockville, Norfolk, Greenville, Deep River, New Milford, Central Village, &c. In fact, in almost every town in which there is water power, or near the sea-coast or navigable streams where steam power can be used, manufacturing villages are springing up. Hartford, at the head of sloop navigation on the Connecticut, being the centre of a rich agricultural district, and of a large circuit of manufacturing villages, together with heavy manufacturing establishments in the city itself, and containing all the banks of the county, with ¼ of the banking capital of the whole state, takes the lead in business. New Haven has a larger population, is much engaged in foreign commerce, and is extensively concerned in manufactures; but it is chiefly noted for its higher literary institutions and æsthetic attractions, which invite many families of fortune, taste, and leisure to make it their place of abode. New London has always had a refined population, and is more isolated in its business relations. The city has some foreign commerce, and is extensively concerned in the whale fisheries. Norwich and Bridgeport, situated at the junction of railroads which pass through valleys filled with manufacturing villages, are growing to be important places. Waterbury is a remarkable instance of the growth of a city from its inherent energies. The same may be said, to a less extent, of Meriden and New Britain.—The population of Connecticut in 1679 was 12,535; in 1756, 131,805; in 1762, 145,666; in 1774, 197,856; in 1782, 208,870; in 1790, 238,141, including 2,764 slaves; in 1800, 251,002; in 1810, 262,042; in 1820, 275,202; in 1830, 296,675; in 1840, 309,978; in 1850, 370,792. The increase during the last 10 years was nearly 20 per cent., or thrice as great as at any former period of 10 years, occasioned by the increase of manufactures, and the influx of foreigners to labor on the railroads. Of the 363,099 white population in 1850, 284,978 were born in the state, 39,117 in other states of the union, and 38,374 in foreign countries, of whom 26,689 were from Ireland. The colored population in 1850 was 7,693, being a decrease of 412 in 10 years, of whom 6,077 were born in the state, 1,351 in other states, and 167 in foreign countries.—The face of the country is variegated by hill and valley, intersected by numerous streams, the principal of which cross the state from N. to S. Most of the state is drained by 3 principal rivers, with their branches, the Connecticut in the central, the Housatonic in the western, and the Thames in the eastern part. Beside these, there are various small streams of limited extent, which flow into Long Island sound. Of these the Quinepiack, which rises between Farmington and New Britain and empties into New Haven harbor, is the largest, and the only one which extends half across the state. The Connecticut, the longest river in New England, rises near Canada, runs between Vermont and New Hampshire, and through Massachusetts and Connecticut into the sound. With its branches it drains the central part of the state, including all of Hartford co. except Southington and the S. E. part of Farmington, all of Middlesex co. except Killingworth, the western part of Tolland co. and the N. E. part of Litchfield co. The latter is watered by the Farmington or Tunxis river, the only considerable branch of the Connecticut in the state. This stream has a singular course. Rising in the highlands of Berkshire, Mass., it runs S. E. to the centre of Farmington, then turns N. in a sluggish stream with little fall 15 m. to Tariffville, where it turns S. E., breaks through the trap mountains, and empties into the Connecticut at Windsor. The natural outlet of this river is New Haven harbor; and at a trifling expense the stream might be turned into the Quinepiack river, as a considerable part of its waters were carried to New Haven by the Farmington canal. The Connecticut river also forsakes its natural basin, and at the narrows below Middletown forcibly breaks through the mountain of primitive rock, and pursues its way S. E. through a primitive region, to Long Island sound at Saybrook, leaving it to the Quinepiack and other small streams to drain the southern part of the valley. Considering the general course of the mountain ranges through the state, bearing to the W. of S., there is something peculiar in the S. E. bearing of the principal streams. On a view of the map of Connecticut, the eye sees a correspondency in the courses of the Housatonic from New Milford to Derby, the Farmington river from its entrance into the state to Farmington, and the Willimantic and Shetucket to their entrance into the Thames, and especially the Connecticut from Middletown into the sound, through an unnatural bed of primitive formation. The E. part of the state is watered by the Thames and its affluents. Its head waters rise in Massachusetts, and its basin embraces all of Windham co., most of Tolland co., and nearly the whole of New London co. It takes the name of the Thames at the junction of the Yantic with the Quinebaug at Norwich, to which place or to Allyn's Point it is navigable for steamboats and small vessels; and from its mouth to New London it forms the best harbor in the state, and one of the best in the country. In the view of the first settlers, the locality corresponded so well with London in facilities for commerce, that they named the river the Thames and the place New London, looking to a future city, which was in fact the first incorporated in the state. Above Norwich the waters of the Thames take different names. The Shetucket unites with the Quinebaug in the upper part of that town, and the 2 streams which unite and form the Shetucket are the Willimantic and Hop rivers. Corresponding with the Thames in the E. is the Housatonic in the W. part of the state, which with its main branch, the Naugatuck, and their branches, waters all of Litchfield co. except the N. E. towns, the W. half of New Haven co., and the N. and E. part of Fairfield co. The Housatonic is navigable for small vessels to its junction with the Naugatuck at Derby. The whole northern and the larger part of the state is wholly drained by the 3 large rivers above mentioned. Numerous small streams fall directly into Long Island sound, the largest of which flow into New Haven harbor. Some of these afford water power for manufacturing purposes; and the broad mouths of most of them form numerous harbors along the coast. Beside those at the mouths of the 3 large rivers, viz., New London, Saybrook, and Stratford, there are convenient harbors at Stonington, Mystic, Niantic, Clinton, Guilford and Sachem's Head, Branford, New Haven, Milford, Bridgeport, Black Rock, Southport, Saugatuck, Norwalk, Stamford, and Greenwich. All of these have communication by water with New York, and the principal of them by steamboat. Steamboats also ascend the Connecticut to Hartford, and the Thames to Norwich.—The central valley of Connecticut is of a secondary formation, and has features peculiarly its own. The E. border commences in East Haven, thence passing N. E. it crosses the Connecticut river below Middletown, thence N. not far from the river through Portland and Glastenbury, and thence more E. through Manchester, and on the borders of Tolland co. into Massachusetts. The W. border commences in West Haven, and pursues a direct course on the W. side of the towns of Hamden, Cheshire, Southington, Farmington, Avon, Simsbury, and through Granby into Massachusetts. After it crosses the Connecticut river, this valley is about 20 m. in width. The soil is alluvial and diluvial, and embraces the most fertile and the poorest land in the state. The alluvial of the Connecticut and Farmington river valleys is a rich loam seldom equalled for continuous tillage and productiveness. Much of the remainder, unless bordering on streams, is a diluvial, light sandy or gravelly soil, especially toward New Haven, and unproductive, unless artificially fertilized from swamps, by lime, or other manures. Several ranges of trap rocks pass through this valley, sometimes continuous, and sometimes in broken elevations, with mural fronts on their W. sides, and gentle declivities on the E. In some instances, small elevations of trap rock are found, which have broken through the granitic rocks, at short distances E. and W. of this secondary valley. They are arranged in dikes and ridges, mostly in one general range, with collateral branches, running centrally through the secondary formation, dividing it into 2 portions. The eastern commences at New Haven, passes easterly of East rock to Middletown, and thence follows the Connecticut river into Massachusetts. The W. portion runs from New Haven through Farmington, to Northampton, through which the defunct Farmington canal once passed. The trap range has several important gaps, through one of which the Tunxis river passes, and through another the railroad from Hartford, at present terminating in Waterbury, which was originally designed to strike the Hudson river at Fishkill. This secondary region, with its borders, embraces valuable mineral resources. The rocks on the E. and W. borders, and underlying the trap, are the red sandstone, or freestone, so useful for building purposes; immense quantities of it are quarried at Portland, on the Connecticut river, and shipped to New York. In Bolton, near the E. borders of this section, and near the railroad running E. from Hartford, is the celebrated quarry of Bolton stone, a micaceous slate, which splits in thin strata, smoothly and beautifully, and is extensively used for flagging and other useful purposes. In various parts of the trap range, copper is found. The Simsbury mines, in the present town of Granby, which was once a part of Simsbury, were worked early in the history of the colony, and were rendered famous by being converted into a state prison, the first in the state. The Bristol copper mines, of late extensively worked, are situate in the N. E. borders of Bristol, a short distance W. of the secondary section, and within 2 m. of the railroad. Lead mines, with a large percentage of silver, have at various times been worked in Middletown, especially during the revolutionary war, but as yet to little profit. Veins of sulphate of barytes—heavy spar—are found in the E. parts of Cheshire and Southington, and large quantities are quarried and used in the composition of paints. Between the trap ridges on the borders of Southington and Berlin is found hydraulic lime, from which are manufactured large quantities of water cement. There is a cobalt mine in Chatham. The country watered by the Thames and its tributaries is granitic and metamorphic in gentle swelling hills, capable of cultivation to their summits. The traveller, as he passes along the ridges, or from summit to summit, often may see the white, convenient farm houses with their large barns, and villages with their tall church spires, dotting the landscape in various directions. Few portions of the United States are better fitted or more celebrated for grazing and the products of the dairy, than the central towns of Windham co.—The section of the state watered by the Housatonic river, extending into New York and Massachusetts, is very broken and mountainous, rendering intercommunication from valley to valley very difficult. But a small proportion of the land is susceptible of profitable tillage; the craggy mountains and hills are still covered with woods, but yet large portions afford excellent pasturage for cattle, sheep, and horses. Goshen and other elevated towns N. of Litchfield are celebrated through the country for the products of their dairies; but the most valuable sources of wealth are their quarries and mines. Extensive beds of hematite iron ore are found, especially in Salisbury and Kent; and the heavy iron works at the former place have long been celebrated, on which chief reliance was placed during the revolutionary war. The valleys of the Housatonic and branches, especially N. of New Milford, contain immense beds of limestone of the best quality, for ornamental and useful purposes, for buildings and monuments, and for burnt lime. The mountains furnish cheap fuel for burning, and the quarries of limestone are easily wrought, so that Canaan lime, as it was formerly designated in the market, though other places afford as good a quality, finds a ready and extensive sale. The quarries of New Preston in Washington furnish large blocks of pure white marble, of fine grain and firm texture, which is suitable for buildings, monuments, and ornamental purposes, and is already well known to the public. These resources, together with the unlimited water power, and the several railroads which traverse it, indicate in this section an immense source of future wealth.—The whole sea-coast, except across New Haven harbor, is of primitive formation, and difficult of cultivation. Much of it is suitable for grazing, but it is the most valuable for the production of fruit and vegetables, especially for the New York market. Granite in great variety, with gneiss and mica slate, is extensively quarried for use as building materials, flagging, &c. The quarries in Haddam on the Connecticut river, and in other places, are extensively worked. The mineral resources of the state have as yet been but partially developed.

Slate for tiling prevails, but to what extent or excellence is not yet well tested. A beautiful marble, some portions resembling the verd antique, is found in Milford and North Milford, which formerly attracted much attention, but was soon neglected on account of the expense of working it; it will again be considered valuable when luxury shall be able to pay the expense. Clay for the manufacture of bricks and pottery abounds, especially in the secondary region; and bricks are extensively manufactured through the valleys, and pottery in Hartford and vicinity. Materials for the manufacture of porcelain and crockery have been discovered, but at present the expenses of the working are too great to afford encouragement to such undertakings. Fire-brick furnaces and crucibles, however, are extensively manufactured in New Milford. The feldspar quarry of Middletown furnishes a pure material for porcelain ware. Mineral chalybeate springs, some of them slightly sulphurous, are found in various parts of the state, but the only one of note is in Stafford, which formerly was much resorted to.—Through both the E. and W. portions of the central valley of the state runs a railroad: through the W., the New Haven and Northampton, commonly called the Canal railroad; and through the E., the Hartford, New Haven, and Springfield railroad, and its continuation, the Connecticut river railroad, with which the former unites at Northampton. The Hartford railroad has a branch from Berlin to Middletown; and the Canal railroad a branch from Farmington to Collinsville, which will ultimately be continued up the Farmington river valley into Massachusetts. Along the valleys of the streams which unite to form the Thames river extend also 3 railroads: the Norwich and Worcester, from Allyn's Point in Preston, through Norwich and up the Quinebaug valley, to Worcester; the New London, Willimantic, and Palmer, from New London, through Norwich and Willimantic, up the Willimantic valley, and onward to Palmer on the Great Western railroad; the Hartford and Providence, from Hartford, through the notch in the mountains at Bolton, thence down the Hop and Shetucket rivers to near Norwich, thence up the Quinebaug valley to Plainfield, thence eastward to Providence. These railroads furnish facilities for transportation, and the streams connecting with them afford unlimited water power, which combined must at no distant day be a source of immense wealth. The 2 chief valleys of the Housatonic are also provided with railroads meeting at Bridgeport. The Housatonic railroad passes up that river into Berkshire, meeting the Western at West Stockbridge, leading to Albany; and the Naugatuck passes up that valley through the flourishing city of Waterbury to Winsted, and will be extended into the Farmington river valley at Hitchcockville. The Harlem railroad also approaches the W. border of the state. A railroad passes along the whole length of the coast, on a continuous route from New York to Providence and Boston, connecting with all the railroads running into the interior, including the Norwalk and Danbury, beside those already mentioned, so that it is scarcely possible for any inhabitant in Connecticut to be 10 m. distant from railroad communication with the chief cities of the state and with New York and Boston.—The natives of Connecticut have ever been distinguished by their enterprise and a disposition to traffic. They are of that genuine Yankee character which enables them to turn their attention to various objects at the same time: and if they do not succeed in one undertaking, they easily turn to another. Necessitated by the natural unproductiveness of the soil, and the small income to support the growing families of the large class of yeomen, they naturally acquire habits of close economy and small savings, by which under favorable circumstances they or their children become rich; when, though liberal and charitable, they manifest what their less prudent but more generous southern fellow citizens consider a want of hospitality and generosity. According to the census returns of 1850 there were in the state, engaged in agriculture, 56,955; in manufactures, 27,932; in commerce, 2,748; in navigation, 3,131; in mining, 151 (much too small a number); and in the learned professions, 1,697. The census, however, not being taken by statisticians, its figures are not fully to be relied on. But we must not look to Connecticut alone for the enterprise and increase of population. Probably no country of similar extent has sent abroad so vast a horde of emigrants in proportion to its population. Shrewd business men from Connecticut may be found in all the principal cities of the union, especially in New York and the West. Dr. Morse said in 1810: "The excess of the number of births over that of deaths is probably greater than in any other country in the world. One fourth part of the present population of New York is supposed to consist of emigrants from Connecticut or their immediate descendants; and the whole number of persons annually emigrating into that and the other states from Connecticut is supposed to amount to from 12,000 to 15,000."—The finances of the state are in a favorable condition. The state has no permanent debt, but on the other hand owns at par value $405,000 worth of bank stock in the best banks in the state. The income of the state, aside from school money, amounts to about $250,000, viz.: from state tax, $100,000; from taxes on banks, savings banks, insurance companies, railroads, &c., $110,000; bank dividends, $35,000, and other small sums. The expenses are: for the general assembly, $36,000; salaries, $23,050; contingent expenses, $60,000; judicial expenses, $95,000; for state paupers, $1,800; superintendence of schools, $3,700; directors of state prison, $300; public institutions, $20,000. The first 3 banks in Connecticut were incorporated in 1792, in Hartford, New Haven, and New London; and only 7 others were incorporated before 1822, including the Derby and Eagle banks, which failed. The aggregate amount of capital of these 10 banks, all in the cities except Derby, was less than $4,000,000. There are now in the state 75 banks, with an aggregate capital of $21,000,000, located in 36 different cities and towns. There are 84 savings banks, with deposits amounting to $13,000,000; and 42 building associations, which were till the present year allowed to lend money at a higher rate than legal interest, with an aggregate amount of stock and deposits of $4,800,000. Some of these institutions have failed, and some others are winding up.—The manufactures of the state are more general, multifarious, and productive than those of any other people of similar means. Nearly all the inhabitants are directly or indirectly interested in some kind of manufactures. It is the genius of the people to attend to a multiplicity of pursuits, and consequently, while all are busy, undertakings on a large scale are seldom made. More recently, however, combined capital, aided by men of means from other states, has much enlarged manufacturing operations. Much of the machinery used is the fruit of inventions and improvements by the manufacturers themselves, among whom we need mention but the names of Whitney, Goodyear, and Colt. The people are always contriving and enthusiastic in whatever they undertake. The most extensive manufactures are those of iron, clocks, carriages, and India-rubber goods—iron of all possible varieties, from the heaviest castings to the finest cutlery, including anchors and boilers, fire-arms, edge tools, wire, &c. Connecticut has almost engrossed the manufacture of clocks for our whole country, and for a large part of the civilized world. The same might formerly have been said of the manufacture of tinware. Collins's axes, Colt's pistols, and Sharp's rifles are becoming equally famous. The genius of Goodyear and of his co-laborers has given greater variety to the manufactures of caoutchouc or India rubber than of almost any other known substance. In the manufacture of carriages, Connecticut is second to no state in the union. The amount of cotton and woollen goods is greater than any other, but not so peculiar to the state. The other most extensive manufactures are those of agricultural and mechanical implements, hats, leather, boots and shoes, paper, saddlery, cabinet furniture, combs, buttons, wooden ware, powder, glass, soap and candles, friction matches, silver and plated ware, jewelry, distilled spirits, &c. The whole amount of manufactured goods returned by the census of 1850 was $45,110,102, but this does not include a vast amount of work done in families and by small mechanics.—The extensive sea-coast, with harbors made by indentations of the coast and the outlets of various rivers and streams, together with the enterprising and hardy character of the men, are favorable to commerce and navigation. Beside the coasting trade, which is extensive, especially with New York, Connecticut is largely interested in foreign commerce. The amount of exports and imports it is difficult to determine, as many of the cargoes owned in the state enter and leave New York. From New London and Stonington are fitted out whaling expeditions. In 1858 there were brought in by 88 arrivals, 1,914 bbls. of sperm oil, 65,130 lbs. of whale oil, and 2,042,240 lbs. of whalebone. New Haven is extensively engaged in the West India trade, in which it has largely shared from the first settlement of the country, many of the owners taking command of their own vessels. No other place of its size has so large an amount of tonnage or capital invested in the business. The chief articles of export are horses and mules brought from Vermont and Canada and the far West, shooks from the mountains north, hay, flour, meal, and provisions, and manufactured goods. Ice and stone are important articles of trade, the former to the West Indies and the southern states, and the latter to New York. The tonnage of the state is about 132,000, of which 70,000 is engaged in the coasting trade, 30,000 in the foreign trade, 25,000 in the whale fishery, and 7,000 in cod and other fisheries. The shad fishery of the Connecticut river is well known. Ship-building is an important item of industry. In 1858 were built 67 vessels, including 5 steamers, with a tonnage of 9,022.—On the sea-coast and navigable streams, and on the routes of railroads, coal from Pennsylvania, Maryland, and Virginia is generally used for fuel for the generation of steam and other manufacturing purposes, especially for iron and India-rubber works. In the interior towns and away from public conveyances, wood is still used for fuel. The mountainous regions, unfit for cultivation, still furnish wood and timber for domestic uses, and for buildings and ships. Formerly the state furnished pine and hemlock lumber, but as these trees are not as reproductive and of as natural a growth as oak and chestnut, the latter are taking their place. A great variety of trees abound in the forests, the most common of which, beside the above, are walnut, butternut, birch, beech, ash, elm, maple, poplar, basswood, whitewood, cedar, &c. Most of the hardy fruit trees adapted to the climate grow naturally, and are easily and profitably cultivated; the apple and pear in great varieties and perfection, the cherry, plum, quince, and formerly the peach; also, berry-bearing shrubs and plants, as the strawberry, raspberry, blackberry, whortleberry, barberry, cranberry, currant, gooseberry, &c. Most of these grow wild, but some of them are much improved by cultivation. The strawberry is becoming a most important article of culture for the market. But perhaps there is nothing which bids so fair for extensive and profitable culture as the grape. Formerly wheat, Indian corn, rye, and oats were raised for exportation; but since competition is opened with the great West, their cultivation has become unprofitable and limited. On the rich alluvial bottoms and highly manured uplands, in the place of corn, tobacco is now extensively cultivated, a source of the greatest wealth to the farmer. Potatoes, buckwheat, turnips, carrots, onions, and garden vegetables generally, are cultivated, but not sufficient to supply the demands of the cities and manufacturing villages, not to name New York. Garden seeds are much raised, and a source of profit, especially in Wethersfield, and by the Shakers at Enfield. Hay is one of the most important crops of the state. Great improvement has recently been made in the breeds of cattle, horses, sheep, and swine, by importation, and care in raising. From the nature of the soil and face of the country, meadows and pastures must ever be numerous and extensive; and by proper care a much larger quantity of live stock may be reared. Away from the interval lands, the dairy and beef cattle are the most profitable for the farmer. Agricultural societies, science, and skill, fostered by the legislature, are doing much to make agriculture inviting and profitable. The total valuation of taxable property in 1857 was $214,189,419, consisting of

Lands	$59,022,522	Household furniture	$1,206,968
Buildings	76,857,811	Stocks and bonds	22,555,819
Quarries and fisheries	919,783	Money at interest	15,901,828
Horses and mules	2,537,803	Employed in merchandise	7,216,108
Cattle	5,282,302	Employed in manufactures	9,756,715
Sheep and swine	219,911	Employed in vessels and commerce	8,566,150
Farming utensils	163,951	Miscellaneous	6,859,812
Carriages	918,342		
Timepieces	469,507		
Musical instruments	405,044		

The number of polls between the ages of 21 and 70, assessed at $333 each, is 71,889.—The public institutions sustained by the state are the state normal school in New Britain, state reform school in Meriden, American asylum for the deaf and dumb, and retreat for the insane, in Hartford, state hospital in New Haven, and state prison in Wethersfield. The board of trustees of the normal school consists of one from each county in the state, appointed for 4 years, who go out of office in rotation. They appoint the principal, who is *ex officio* superintendent of common schools, and who arranges and superintends county conventions of teachers. To the school was appropriated $4,400 in 1858. During the year 267 pupils attended the institution. Connected with it, and under the supervision of its officers, is a model graded school in New Britain. The state reform school, for the instruction, employment, and reformation of juvenile offenders, established in 1851, is under the care of a similar board of trustees. The last appropriation by the general assembly was but $2,500, much less than usual. The farm connected with the institution contains 163 acres. The number of committals during the year was 29, and the average attendance 160. Labor and instruction are combined in the institution, and many on leaving it are provided with situations with farmers or mechanics. Such institutions save many, and often the most uncontrollable youths, from utter ruin. The American asylum for the deaf and dumb, as its name indicates, was the first institution of the kind in America, with which is indissolubly associated the never to be forgotten name of Thomas H. Gallaudet, and the scarcely less famous name of the philanthropist Daniel Wadsworth. The attention of Gallaudet was turned to the subject by the condition of a young daughter of an intimate friend and neighbor, who was deaf and dumb. The inquiry in his mind was: Cannot something be done for her? Aided by friends, he went to Paris, studied the system of instruction, and returned with an assistant, Mr. Clerc, who still survives at a good old age, and commenced instruction in 1817. Since that time nearly all the unfortunate deaf mutes in the New England states, of suitable age, and many from southern states, have enjoyed the benefits of this institution, and all the New England states still patronize it. The whole number instructed has been about [illegible]; the annual attendance is now about 250. The annual appropriation by the state is [illegible]. An annual appropriation is made by Connecticut of $2,000 for the support of pupils at the institution for the blind in Boston. The retreat for the insane has been very successful. It is a model institution. The annual appropriation by the state is $7,000. The annual admissions are about 150, and the average attendance about 200. About ½ of those discharged are pronounced recovered. The whole number of admissions has been 3,300. The state hospital is less under state control than the other institutions. The annual appropriation is [illegible]. The operations by the associated surgeons are generally gratuitous, and afford useful aid in imparting instruction to medical students who are connected with Yale college, or are studying in New Haven. The state prison is as successfully conducted as any similar institution in our country. The prisoners silently labor in companies by day, and suffer solitary confinement at night. It is under the control of 3 directors, chosen successively for 3 years by the general assembly. The moral and religious influence in the institution is good, and a large portion of the prisoners become good citizens on their discharge. Contracts are usually made for the labor of the prisoners, which the last year amounted to near $20,000, which, after paying all expenses, left a surplus of $3,000. The usual number of prisoners is about 200.—Provision is made by the constitution of the state for public schools. A school fund, derived from the sale of public lands, chiefly on the Western Reserve, in Ohio, granted to Connecticut in lieu of her title to territory extending by her charter to the South sea, now amounting to $2,046,397, is for ever set apart for this purpose. Of this fund, $40[illegible],900 is invested in 28 banks in the state, $1,634,438 in bonds and mortgages, chiefly in Connecticut, New York, and Massachusetts, leaving only $3,059 in real estate. The income for the year 1857-'58 was $141,852, which is distributed among 101,486 children in the state between the ages of 4 and 16, being an increase of 10,000 since 1850. There is also appropriated to public schools the income of the United States deposit fund, which the same year amounted to $35,000; the proceeds of local funds, about $50,000; tax of 10 cents on each poll and 3 cents on every $100 value of property in the state, amounting to $71,441; taxes laid by towns and school districts, about $60,000; assessed on parents, &c., about $80,000; making a total of $439,468 (the amount reported in the annual report of the commissioner to the general assembly) appropriated during the year for the support of public schools. Towns and school districts have unlimited power to support schools by a general tax, or a part of the expense may be assessed on the scholars, with the allowance of abatement of taxes by the selectmen for those unable to pay, which deficiency the town treasury must meet. The state makes an annual appropriation to the state normal school in New Britain, which is doing much to raise the qualifications of teachers and elevate the character of public schools. No people have made more ample provision for public education and religious institutions than the people of Connecticut, ever since the settlement in 1636; and wherever in our country you find settlers from Connecticut, there you find the school house and the meeting house. Their motto is, whatever is for the public good is for the individual good. Formerly there were many public academies in the state, but they are becoming gradually absorbed in public graded schools, so that in most of the large towns the youth can now fit for college or other spheres of usefulness and influence at the public expense. Private schools of a high order are chiefly supported by pupils from other states, especially from large cities. There are 3 colleges in the state, Yale college in New Haven, Trinity college in Hartford, and Wesleyan university in Middletown. Neither of them is in any measure under the control of the state, nor dependent on it for patronage, though public grants, to a limited extent, have sometimes been made. (See TRINITY COLLEGE, WESLEYAN UNIVERSITY, and YALE COLLEGE.) Hartford from the first had classical teachers in the learned languages, and New Haven can boast of the famous schoolmaster Ezekiel Cheever, whose pedagogical life extended through more than 70 years, and was closed in Boston. The Baptists have a literary institution in Suffield; the Congregational union has a theological seminary in East Windsor Hill; and the Episcopalians a theological school in Middletown. The prevailing religious denomination is the Congregational, which has 283 churches; the Methodists have 185; Episcopalians 115; Baptists 114; and there are about 60 of minor denominations. There are in the state 15 daily newspapers, all of which publish weekly editions, and some of them a semi-weekly or tri-weekly; there are beside 22 weeklies, 3 of them religious and 1 agricultural; 5 monthlies; 1, the "New Englander," appearing every 2 months, and the "Journal of Science," quarterly.—The constitution of Connecticut was adopted in 1818. The declaration of rights affirms the following principles: an equality of rights; power inherent in the people; religious liberty and equality; freedom of speech and of the press; truth in libel suits; security against unreasonable search and seizure, and from illegal arrest; right of the accused to a fair and open trial; rights of property; courts open to all; no excessive bail, and bail allowed except for capital offences; right of petition and redress; right to bear arms; subjection of the military to the civil power; no hereditary privileges; trial by jury, &c. The legislative, executive, and judicial powers shall be kept distinct. The legislature shall consist of a senate and house of representatives, called the general assembly, to meet alternately at Hartford and New Haven on the 1st Monday of May, at Hartford in the odd years. The governor may call extra sessions. The house of representatives consists of 2 representatives from each town incorporated before 1785, whatever its size; and with few exceptions, each town incorporated since is entitled to only 1. Thus, Union with a population of about 725 has 2 representatives, while Bridgeport with a population of 10,000 has but 1. But on a division of a town, the original town may by vote relinquish one of its representatives, which is often done to secure such a division. The present number of representatives from the 160 towns is 284, elected annually by a plurality vote. The compensation is $1 50 a day, and the same to clerks. The speaker has $2 50 a day. The senate consists of not less than 18 and not more than 24 members, elected by districts which consist of counties or a division of counties, the number and extent to be determined by the general assembly after each decennial United States census. The present number of districts and senators is 21, Windham, Middlesex, and Tolland counties being entitled each to 2, and the other counties each to 3, very unequal in population. Senators are elected by a plurality vote; the votes are returned to the secretary's office and canvassed by the secretary, treasurer, and comptroller. There is no limitation as to age. The compensation is $2 a day; clerk the same. Each house determines the qualifications of its members. The governor, lieutenant-governor, secretary of state, treasurer, and comptroller are chosen annually. The governor must be 30 years of age; the votes are returned to the secretary of state, and canvassed by him and the treasurer and comptroller. A majority of all the votes is required for a choice; and if no choice is made by the people, the 2 houses of the general assembly in convention make a choice from the 2 having the highest number of votes. All state officers thus annually chosen enter on their duties on the 1st Wednesday of May, at which time the general assembly meets. The salary of the governor is $1,100; of lieutenant-governor, *ex officio* president of the senate, $300; and of the other executive officers, $1,000 each. Their clerks are allowed $2 50 a day. The school fund commissioner is appointed during pleasure by the general assembly, and has a salary of $1,250 and travelling expenses. The powers of the governor are very limited. He presents his annual message to the general assembly, signs commissions, approves of laws enacted, or if he disapproves, the 2 houses may, after reconsideration, pass them by a major vote over his veto. He makes no important appointments except notaries public and commissioners for Connecticut resident in other states. The pardoning power is vested in the general assembly; the governor can only grant a temporary reprieve. The only courts are the supreme court or court of errors, and the superior court. County courts are abolished. The whole number of judges is 9, the 3 senior of whom constitute the supreme court, which annually holds 2 sessions in each county, and their decisions are reported by a reporter at a salary of $1,200. The other 6 judges singly hold usually 4 sessions a year in each county. The salary of the judges is $2,000 a year. They are elected by the general assembly, and those elected in 1855 and subsequently hold office for 8 years. The judges appoint the clerks of the courts in each county. Probate courts are held in each probate district, of which there are more than 100 in the state, most of them embracing single towns. The judges are chosen annually by the people. Justices of the peace are elected biennially by the people of the towns in which they reside. Judicial offices cannot be retained past the age of 70 years. Sheriffs are chosen by the people for 3 years. All elections are by ballot. The time of the annual election is the 1st Monday of April, and July 4 is the usual time for officers to enter on their duties. The right of suffrage is limited to white citizens who are able to read. The board for the admission of electors consists of the town clerk and selectmen, and a registry of electors is required. The duty of the worship of the Supreme Being is recognized, but liberty of conscience as to the manner of it is allowed. Every member of a religious society is responsible for its debts; but he may withdraw by giving the clerk a written notice.—The Connecticut river and the seacoast adjacent to its mouth were first explored by the Dutch from New Netherlands, who laid claim to the territory. The counter claim of the English rested on the following facts: On Nov. 3, 1620, the first patent was granted by James I. to the duke of Lenox, the earl of Warwick, and others, to the number of 40 associates, under the title of the council established at Plymouth for the planting, ruling, and governing of New England in America, and embraced all the country between lat. 40° and 48° N., extending from sea to sea within these limits. On March 19, 1631, the patent of Connecticut was granted, and signed by Robert, earl of Warwick, president of the council of Plymouth, Lord Say and Seal, Lord Brooke, Sir Richard Saltonstall, and associates, "embracing all that part of New England in America, extending in breadth 120 miles, as the coast lieth, from the Narraganset river toward Virginia, and in longitude from the Western ocean to the South sea," meaning thereby from the Atlantic to the Pacific ocean. This included all the sea-coast of Connecticut, and extended an uncertain distance into the interior. Practically, it extended to the S. line of Massachusetts, which by their patent was a due W. line 3 miles S. from every part of the Charles river. In April, 1631, Seguin, the Indian sagamore of the whole of Connecticut river and the country thereabout, having been conquered by the Pequots, sent one of his chiefs to Gov. Winthrop at Boston, desiring him to send some Englishmen to settle and plant in his country. He also sent a similar message to Gov. Winslow at Plymouth. In the summer of 1632 an exploring party from Plymouth made discoveries on the Connecticut, and fixed upon a site for a trading house, at the mouth of the Tunxis river in Windsor. But while negotiations were taking place, the Dutch were not inactive. On June 8, 1633, Jacob van Curler, agent of Wouter van Twiller, Dutch governor of New Netherlands, purchased of Sassacus, sachem of the Pequots, at the request of Seguin, the land at the junction of the Connecticut and Little rivers, in Hartford, upon which the Dutch built a trading house and fort, called the house of Good Hope. This locality is called the Dutch Point to this day. For some years after Hartford was settled, the Dutch retained possession, and finally sold out to the English. The same year (1633) Capt. William Holmes of Plymouth sailed up the Connecticut river with materials for building a trading house, and though forbidden by the Dutch, who threatened to fire upon him if he attempted to pass their fort, sailed onward unhurt, and erected the proposed trading house in Windsor. Previous to this, several companies who had arrived in Massachusetts had turned their attention to the Connecticut as the location of their permanent settlements. A company from Devonshire, Dorsetshire, and Somersetshire in England, when on the point of embarking from Plymouth for New England, had formed themselves into a church, and on their arrival at Boston, May 30, 1630, located at Dorchester under the Rev. John Warham as pastor, and the Rev. John Maverick as teacher. Of the company were Roger Ludlow and Henry Wolcott. Sir Richard Saltonstall's people the same year settled at Watertown, and formed a church, Aug. 27, 1630, with the Rev. Mr. Phillips as pastor. The third company was that of the Rev. Thomas Hooker, who had been a famous preacher in Chelmsford, Essex, but was silenced for nonconformity, and escaped into Holland in 1630. In 1632 a large number of them settled in Newtown, now Cambridge, and were joined by others who had before come over and settled at Weymouth, with the desire and expectation of securing Mr. Hooker as their pastor. Having secured the Rev. Samuel Stone as lecturer, Mr. Hooker took passage for America with John Haynes, afterward governor of Massachusetts and Connecticut, arrived in Boston, Sept. 4, 1633, and proceeded to Newtown, where a church was organized, Oct. 11, with Mr. Hooker for pastor and Mr. Stone for teacher. In May, 1634, these companies applied to the general court of Massachusetts for permission to remove to the Connecticut river for the purpose of commencing a new settlement. The application failed. Some of the Watertown people, however, perhaps an exploring party, erected a few huts in Wethersfield, and made a shift to winter there in 1634–'5. This constitutes Wethersfield the first settled town in Connecticut, and thus it has ever been practically regarded in the etiquette of inter-town matters. This is also confirmed by the manuscripts of the Rev. Stephen Mix, who was settled as pastor of the church in Wethersfield in 1694. The next year (1635) the application was renewed for liberty to remove to the Connecticut, and reluctantly granted, on condition that the settlers should remain under the jurisdiction of Massachusetts. During the summer, pioneers from Mr. Warham's company made preparations for a permanent settlement at Windsor, and the Watertown people prosecuted the settlement at Wethersfield. The attempt of parties to effect a removal late in the fall of 1635 proved disastrous from cold, famine, sickness, and loss of life. Preparations having been made, as the spring of 1636 advanced, the 3 companies with their pastors effected a removal and final settlement, and at first named the 3 towns Newtown, Dorchester, and Watertown, from the places of their residence in Massachusetts; but in Feb. 1637, the names were changed to Hartford, Windsor, and Wethersfield. Their pastors were Mr. Hooker and Mr. Stone in Hartford, and Mr. Warham in Windsor, Mr. Maverick having died in March. As Mr. Phillips did not go with his people to Wethersfield, they chose for their pastor the Rev. Henry Smith, recently arrived from England. Beside their pastors, the chief men were John Haynes, Edward Hopkins, George Wyllys, Thomas Welles, John Webster (all of whom were afterward governors), William Whiting, John Steele, and John Talcott, of Hartford; Roger Ludlow, Henry Wolcott, William Phelps, and Capt. John Mason, of Windsor; and William Swain, Thurston Raynor, and Andrew Ward, of Wethersfield. At the close of the year there were about 250 men and some 750 inhabitants in the 3 towns. Before the final removal from Massachusetts, March 3, 1636, the general court of that colony appointed a commission, consisting of Roger Ludlow, William Pynchon, John Steele, William Swain, Henry Smith, William Westwood, William Phelps, and Andrew Ward, who were invested with legislative and judicial power to govern the new plantation. They were all settlers of Connecticut except Mr. Pynchon, who resided in Springfield, but acted with them first in Nov. Mr. Smith, being chosen pastor of the church in Wethersfield, did not take his seat with them. Their first court was held April 26, 1636, at Hartford, at which they appointed a constable for each town as an executive officer, issued sundry orders, and performed magisterial duties. Their functions appear to have continued but one year, as perhaps the contemplated Pequot war demanded thus early the adoption of the principle of popular sovereignty. While these settlements were taking place, John Winthrop, jun., who held a commission under the patentees, Lords Say and Seal, Brooke, and others, proceeded to effect a settlement and erect a fort at the mouth of the Connecticut river, as he had learned that the Dutch were making preparations to take possession of the same. No sooner had Mr. Winthrop's party effected a landing in Nov. 1635, and mounted 2 pieces of cannon, than a Dutch vessel appeared off the harbor. The New Haven company were also interested in preventing the Dutch from gaining a footing in the province. In the spring of 1636 a good fort was erected, with accommodations for a garrison. In 1639, George Fenwick and others made a settlement, in the name of the proprietors, which he called Saybrook, from the names of Lords Say and Seal, and Brooke, principal proprietors. This remained a distinct government until 1644, when it was transferred to and united with Connecticut, of which colony Mr. Fenwick was elected a magistrate. The Dutch and the Pequot Indians, who claimed the country, the first by occupancy and the last by conquest, did not like to surrender the jurisdiction without a struggle. Sassacus, the Pequot chief, had conquered the other tribes, and exercised an arbitrary and fearful sway. Probably expecting the countenance of the Dutch, the Pequots manifested a savage and bloodthirsty determination to wreak their vengeance on all who came within their power. Vessels on the coast or in the river were seized when within their reach, and the men horribly mangled and murdered without mercy; and laborers as they went into the fields were watched and killed, and their crops were destroyed. It appeared to be a case of life and death with the colonists. Self-protection induced the 3 towns to organize themselves into an independent government. A general court was held, May 1, 1637, consisting of the magistrates of the colony and delegates from the 3 towns, called committees, which declared war against the Pequots. A levy was made of 90 men, nearly half the able-bodied men of the colony, 42 from Hartford, 30 from Windsor, and 18 from Wethersfield, who were placed under the command of Capt. John Mason, with Mr. Stone as chaplain. Supplies were at once provided. The main force of the Pequots was in Groton. The expedition sailed around into Narraganset bay, and with all speed, without waiting for reënforcements on the way from Massachusetts, lest the enemy might gain a knowledge of their approach, hastened to the Pequot fort, took it by surprise, fired the wigwams, killed or dispersed all the warriors, and so completely annihilated their power that the Pequots were no longer known as a tribe. The place where the fort stood was called Mystic, from the mysterious interposition of Providence in behalf of the colonists. Ever after Capt. Mason was stationed on the border towns, and while he lived his name was sufficient to prevent any hostile rising of the Indians against the whites. While pursuing the Pequots, the harbor of Quinepiack and the adaptation of the location for a commercial town were discovered, and made known to the most distinguished company of emigrants that ever came to New England, which arrived in Boston from London, July 26, 1637. Their pastor and leaders were the Rev. John Davenport, who had been a famous minister in London, Gov. Theophilus Eaton, a wealthy merchant, the Rev. Samuel Eaton, his brother, Thomas Gregson, Robert and Francis Newman, Stephen Goodyear, and others. Edward Hopkins, son-in-law of Gov. Eaton, also a London merchant, was of the company, but settled in Hartford. They landed April 18, 1638, and soon after named the place New Haven. The town plot was half a mile square, divided into 9 subordinate squares, with the centre one reserved for public use. The next year, they adopted their system of civil polity, the peculiar feature of which was that all civil power should be vested in members of the church.—A constitution for the government of the colony of Connecticut was perfected and approved by a general vote of the people, Jan. 14, 1639—the first example in history of a written constitution organizing a government and defining its powers. How it was undertaken, and under what auspices it was perfected without a model as a guide, history gives us no information. It formed the basis of the charter of 1662, and its leading features have been copied into the constitutions of the several states and of the United States. After stating that the word of God requires human governments, and that the object of such governments is to maintain and preserve the moral and civil welfare of the people, it makes provison for the 3 departments of government, the legislative, judicial, and executive, which were all to be filled by incumbents to be appointed by and to derive their power from the people. The freemen—and all might be made freemen who had been admitted inhabitants by the towns themselves—were to meet annually in April, at a court of elections, for the choice of so many magistrates and other public officers as should be found requisite, one of whom was to be designated as governor. All elections were by ballot. The governor was voted for first, and elected by a plurality vote; then the magistrates, subsequently called assistants, were voted for in a similar manner. The governor, or executive, sat with the magistrates in their judicial capacity, and both the governor and magistrates sat with the deputies elected by the several towns in a legislative capacity. As the deputies constituted a majority of the general assembly, the legislative power was substantially in the hands of the people, while the governor and magistrates could advise as to necessary legislation. As there were to be 2 sessions of the legislature annually, one in the spring called the court of elections, and the other in the fall, for enacting laws and other public services, the towns chose their deputies semi-annually. In this constitution, and in the subsequent administration of it till 1661, there is no recognition of any higher human power than the people, and practically Connecticut was an independent government. But when Charles II. came to the throne, fears began to be entertained for the future. To obtain the favor of the king, the general court determined to make a formal avowal of their allegiance to the crown and obtain a charter. In May, 1661, Gov. John Winthrop presented to the general court the form of a petition to the king for this object, which was approved, and he was deputed to present it to his majesty. Gov. Winthrop was a man of rare gifts and attainments and one of the most accomplished gentlemen of the age. He had in his possession a ring of great value, which Charles I. had presented to his grandfather or his grandmother. Seizing the opportunity when the vacillating king was in a favorable mood, he presented the ring and obtained the royal assent to the charter, which was signed April 30, 1662. The charter embraced the colonies of Connecticut and New Haven, to which the latter demurred, and a perfect union was not effected till Jan. 1665. The charter granted the colony jurisdiction over the lands within its limits; provided for the election of a governor, deputy governor, and 12 assistants, and 2 deputies from each town—substantially the same as provided for under the previous constitution; allowed the free transportation of colonists and merchandise from England to the colony; guaranteed to the colonists the rights of English citizens; provided for the making of laws and organization of courts by the general assembly, and the appointment of all necessary officers for the public good; the organization of a soldiery, providing for the public defence, &c. This charter was of so general a character, and conferred so large powers, that no change was necessary when Connecticut took her stand as one of the independent states of the union, on the declaration of independence in 1776; but it was continued, without alteration, as the constitution of the state until 1818, when the present constitution was formed. Until 1670, at the general election, all the freemen assembled at Hartford and personally voted for the state officers and assistants. Thereafter they voted by proxy, or sent up their votes. In July, 1685, a writ of *quo warranto* was issued by the king's bench and served on the governor and company, with the design of taking away the charter and uniting the New England colonies in one government under a royal governor. Sir Edmund Andros arrived in Boston, Dec. 19, 1686, with his commission as governor. In Oct. 1687, he came to Hartford while the assembly was sitting and demanded the charter. It was produced and laid upon the table. The discussion was protracted into the evening. Suddenly the lights were extinguished, and Capt. Joseph Wadsworth seized and carried away the charter and hid it in the famous charter oak. Andros seized the government, which he administered, or rather it was administered under him, in a very oppressive manner. On the dethronement of James II., and the consequent deposition of Andros, the government, on May 9, 1689, resumed its functions as if the period since the usurpation of Andros to that time were annihilated; and as the charter had not in the king's court been declared forfeit, it was, after a struggle, allowed to continue in force, the freest constitution ever granted by royal favor. Until Oct. 1698, the general assembly constituted but one house, consisting of the governor, assistants, and deputies, over which the governor presided, and the secretary of state was clerk. At that session the governor and assistants, or council, were constituted the upper house, and the deputies from the several towns the lower house, with power to appoint their own speaker and clerk. Every bill must pass both houses before it could become a law. From the union of the colonies until 1701 the general court had met in Hartford. Thereafter it was ordered that the May session should be held in Hartford and the October in New Haven. In former days, when caucuses and nominating conventions were unknown, the freemen of Connecticut had a peculiar method of selecting candidates for office. For instance, when members of the upper house of the general assembly and of congress were elected by general ticket, any freeman, at a previous electors' meeting, might nominate any candidate for one of these offices, whereupon the moderator would call upon those favorable to the nomination to bring in their votes, or, by a change of the law in 1801, to rise and be counted. These names were returned to the secretary of state and counted, and those who had the highest number of votes—about twice the number to be elected—were to stand as candidates at the next election, and every elector was obliged to make his selection from this nomination. This practice continued from the first organization of the colonial government in Connecticut till the adoption of the constitution in 1818. Another feature was that the governor should be selected from those who were in the magistracy, or upper house of the general assembly. This was changed when the younger Gov. Winthrop died, Nov. 27, 1707, and the lieutenant-governor was too advanced in life to take the reins of government in perilous times. As the exigencies required an able, accomplished, and skilful head of the government, a special assembly was convoked, Dec. 17, 1707, and in joint convention they made choice of the Rev. and Hon. Gurdon Saltonstall, of New London; and in Jan. following the law was repealed, thus throwing open the selection of governor from the whole body of freemen. But never thereafter was a governor selected who had not before been a prominent man in the upper house.—One feature in the early government of Connecticut was the union of the executive and judicial with the legislative department of the government. Still the Connecticut fathers were far in advance of the age in which they lived. Practically, as long as the magistrates and deputies constituted but one legislative body, the latter were the majority, and the former by their experience could do much to recommend needed legislation and give proper form to the laws passed, of which we cannot now always boast. And soon after the separation of the general assembly into 2 bodies, the superior court was constituted a distinct judicial body. Thus was the present system gradually adopted as change appeared necessary. The governor, lieutenant-governor, and magistrates, under the constitution of 1639, constituted the judicial court of the colony, called the particular court; and under the charter, in which the magistrates were called assistants, the title was the court of assistants, of whom 7 constituted a quorum, and 2 sessions a year were held, on the Tuesdays before the meetings of the general court, or assembly, to hear appeals from the county courts and try capital offences. In 1703, 4 years after the separation of the general assembly into 2 bodies, the 7 assistants to hold the courts were appointed by vote of the 2 houses. In 1711 the superior court was organized, essentially the same as at the present day, consisting of a chief justice and 4 other judges, chosen annually by the general assembly, who together were to hold courts in each of the then 4 counties, as the laws should direct. For many years the judges were selected from the body of assistants (senators), and until 1785 the chief justice was the lieutenant-governor. Elisha Williams, who was president of Yale college from 1726 to 1739, was appointed judge in 1740, the first who was not an assistant.—The towns of Connecticut—and by towns is always meant the townships, and not the settlements—have from the first been pure democracies possessing very general powers. Very early after the receipt of the charter the general assembly granted to the several towns special charters or patents, securing to them the right of soil to the lands within their limits, and requiring the towns to appoint a registrar or town clerk, and provide a record book for the entry of every man's land, which was required to be there recorded. They appointed their own officers, admitted inhabitants, made needed regulations or laws, levied taxes, maintained schools, &c. In 1639 they were authorized to appoint a board to meet once in 2 months to determine controversies for trespasses or debts not exceeding 40*s.*, with the right of appeal; and the townsmen were instructed to attend to the inventory and registering of the estates of persons deceased in their several towns; but these 2 regulations have gone into disuse. It has ever been the law that the town clerks shall record all births, deaths, and marriages, which was generally done till the time of the revolutionary war, when it was neglected; but of late years the practice has been revived and enforced by penalties. The town officers who have usually been elected—now commonly done on the 1st Monday of Oct.—are townsmen or selectmen, who have large executive and discretionary powers, town clerks, registrars, collectors of taxes, constables, grand jurors, assessors, boards of relief, boards of education, surveyors of highways, fence viewers, hay wards, sealers of weights and measures, weighers and measurers, gaugers and inspectors, pound keepers, &c. Towns are responsible for damages from defects of highways or bridges, and for the support of all their inhabitants who become paupers. A man becomes an inhabitant by birth, continued residence in a town for 6 years free of any town charge, or by appointment to office. Aliens or any others who are not inhabitants, but are liable to become a burden, may be warned to leave the town, and, if necessary, forcibly removed. Originally inhabitants were received only by vote of the town where they resided.—During the revolutionary struggle no other state in the union furnished so many men according to its population, or so much aid according to its means, as Connecticut; and Gen. Washington had no coadjutor more efficient than Jonathan Trumbull (brother Jonathan), governor of Connecticut. On June 14, 1776, 20 days before the declaration of independence, the general assembly of Connecticut issued a manifesto, in which they declared that their multiplied grievances made it evident that they had nothing to hope from the justice, humanity, or temperate councils of the British king or his parliament, and that no alternative was left but absolute and indefinite submission, or a total renunciation of all connection with the British nation; and appealing to the God who knows all hearts for the purity of their motives, they unanimously instructed their delegates in congress to propose to that body "to declare the united American colonies free and independent states, absolved from all allegiance to the king of Great Britain."—The first printer in the colony was Thomas Short, who was recommended by Mr. Green of Boston, and came to New London in 1709. He printed the Saybrook platform in 1710, and soon after died. This platform was the constitution of the Congregational churches in Connecticut, adopted in 1708, and based on the same democratic principles as the civil constitution or charter. In 1714 Timothy Green, a descendant of Samuel Green, of Cambridge, the first printer in North America, was induced to take up his residence in New London as public printer of the colony, with a salary of £50, to print the election sermons, proclamations for fasts and thanksgiving, and the laws of the session.

CONNECTICUT RIVER. See CONNECTICUT.

CONNER, DAVID, a commodore in the U. S. navy, born in Mifflin co., Pa., about 1792, died in Philadelphia, March 20, 1856. He entered the navy as midshipman in Jan. 1809, and, as acting lieutenant, took part in the action between the Hornet and Peacock, Feb. 24, 1813. The Peacock surrendered in a sinking condition in 15 minutes after the engagement commenced, and Lieut. Conner was charged with the duty of removing the prisoners, most of whom he succeeded in saving, though not without losing 3 of his own men. He was among the last to leave the sinking vessel. In 1813 he became a lieutenant, and remained in the Hornet, under the command of Capt. James Biddle. In the action with the Penguin in 1815, he was dangerously wounded. For his gallant conduct in that action, he was presented with a medal by congress, in common with the other commissioned officers, and the legislature of his native state unanimously voted him a sword. On March 3, 1825, he was promoted to the rank of commander, and on March 3, 1835, to that of captain. At the opening of the war with Mexico, he was in command of the squadron on the West India station, and before the commencement of actual hostilities was much commended by the government for the manner in which he performed his duties. In May, 1846, having received intelligence that Arista had determined to attack Gen. Taylor, he sailed from Vera Cruz for Brazos Santiago, where he arrived on the 8th, too late for the fighting. He now established an efficient blockade of the Mexican ports on the gulf. In Aug. and Oct. two fruitless attempts were made to enter the port of Alvarado. On Nov. 14, the port of Tampico was captured. On March 9, 1847, he directed the landing of the army under Gen. Scott, at Vera Cruz, but was soon after compelled, by the failure of his health, to return home. This was his last service.

CONON, an Athenian general and admiral, lived about 400 B. C. In 413 he commanded a fleet of 18 ships off Naupactus, to prevent the Corinthians from sending aid to the Syracusans; in 409 he was elected general in connection with Alcibiades and Thrasybulus; in 406, he was made the chief of the 10 generals appointed to supersede Alcibiades, whose dissolute conduct and mismanagement had disgusted the Athenian people. Soon after, in an engagement with the Spartan admiral Callicratidas, off Mitylene, he was defeated with the loss of 30 vessels, and was compelled, with the remnant of his fleet, to take refuge in the harbor of Mitylene, where he was closely blockaded by his opponent till the Athenian victory at Arginusæ effected his deliverance. Having been soon after appointed, with 5 colleagues, to the command of a large fleet, he proceeded at once to the Hellespont to engage the Lacedæmonian squadron, under the command of Lysander, but was unfortunately surprised at Ægospotami, and sustained that memorable defeat which placed Athens at the mercy of her great rival. How far he was responsible for this disaster it is not easy to determine, but that his colleagues were shamefully remiss in duty there is no doubt. He was the only Athenian general on his guard, and, with the division under his command, escaped to his friend Evagoras, king of Cyprus, where he remained 8 years. In the year 395 B. C., having repaired in person to the Persian court to offer his services to Artaxerxes against the Spartans, he was appointed with Pharnabazus to the joint command of a powerful fleet, with which, in August, 394, he gained his splendid victory over Pisander, in the famous naval battle of Cnidus. The next year, Conon and Pharnabazus sailed for the Peloponnesus. After they had laid waste the coast of Laconia, Conon repaired to Athens, and rebuilt the walls and fortifications, both of the city and of the Piræus. Thus he had the satisfaction at last of being hailed by his grateful countrymen as at once the deliverer and the restorer of the city. Having been subsequently sent by the Athenians on an embassy to Tiribazus, satrap of Ionia, to oppose the intrigues of Antalcidas, who was endeavoring to negotiate a general peace under the mediation of Persia, he was seized, in violation of public faith, and thrown into prison. According to some accounts he was put to death, but it is more probable that he escaped to Cyprus, where he spent the rest of his days. The public life of this distinguished general was one of the purest and most useful, as well as one of the most eventful, that adorn Athenian annals.

CONRAD. I. Duke of Franconia, elected king of Germany when the male line of descendants of Charlemagne had become extinct in 911. The royal authority had been so much shattered under the feeble rule of his predecessors that his brief reign was only a series of campaigns against his disobedient vassals. He was unsuccessful in his efforts to reconquer Lorraine from France, and to subdue the duke Henry of Saxony, but in Swabia he overcame 2 lords who had broken the public peace and had them tried and executed. He also expelled the seditious duke of Bavaria, Arnulf, who, however, took a terrible revenge by inciting the wild Magyars against Germany. They invaded the empire and carried destruction to the borders of France. Conrad, having been unable to resist them, on his deathbed entreated his subjects to elect his former adversary, the duke of Saxony, his successor. He died Dec. 23, 918. II. King of Germany and Roman emperor (1025–1039), one of the wisest and most energetic among the rulers of Germany. Immediately after his election he visited all the provinces of the empire, establishing law and order with a powerful hand. He proclaimed the *treuga Dei* (God's peace), and endeavored by several judicious measures to base the imperial power more immediately upon the lower nobility, that is to say, upon the people, since at that time the middle and lower classes were not yet thought of in politics. In 1026 he went to Italy, chastised the seditious vassal princes and municipalities, confirmed the rule of the Normans in southern Italy, and was crowned Roman emperor by the pope. Having restored peace and order throughout Italy, he returned to Germany, suppressed a rebellion instigated by Ernest of Swabia, repelled the Hungarians who attempted to wrest Bavaria from the empire, subdued the Poles, and conquered Burgundy. While his son Henry subdued the Slavi, who had invaded northern Saxony, Conrad went once more to Italy, where the imperial authority was again defied by the nobles and clergy (1036). But this time he was only partially successful, and was compelled to raise the siege of Milan. Returned to Germany, he died June 4, 1039. He was succeeded by his son Henry III. III. King of Germany, a son of Frederic of Swabia, was born in 1093. At the early age of 20 he distinguished himself in the defence of the emperor Henry V. against his enemies. Returning from a pilgrimage to Jerusalem, he found Lothaire, elected by the Guelph party, upon the imperial throne, and immediately set himself up as king in opposition, but was ultimately defeated. Still his courage, his manliness, and frankness, perhaps also apprehensions of the overshadowing power of the Guelphs, obtained for him many friends among the German princes, and after Lothaire's decease (1137) he was elected king. He at once turned against his rival, Henry the Haughty, duke of Bavaria and Saxony, and wrested Bavaria from him, but left him in possession of Saxony. The attempts of Henry's brother, Guelph IV., to reconquer Bavaria, were frustrated by Conrad. In the mean time the Italian municipalities had risen against the papal power, and Conrad was invited by both parties to aid them. Distrusting the friendship of the Italians, he declined to do so, nor was he tempted by the offer of the imperial crown. A crusade which he undertook was unsuccessful. He was defeated at Iconium (1147), and compelled to desist from his attempt to conquer Damascus and Ascalon. When, in 1148, he returned to Germany, he found disorder reigning supreme. The Guelphs, allied with the Norman king, Roger of Sicily, had once more tried to reconquer Bavaria; in Poland the legitimate duke Ladislas II. required Conrad's assistance against his own brothers; and Italy once more urged upon him the necessity of his presence. While preparing for a campaign in Italy, he suddenly died, Feb. 15, 1152, probably poisoned by agents of King Roger. IV. King of Germany, son of Frederic II., acted as the lieutenant-general of the German empire for his father after 1237, and succeeded him in 1250. With great energy he contended against the intrigues of the pope and the usurpations of his tools among the German princes, repulsed the Mongolians who had invaded the empire, and succeeded in putting down the rival king, Henry Raspe of Thuringia, set up by the pope (1247). But in 1251 he was defeated by his own rival, William of Holland, and though he maintained himself upon the throne, the prestige of his power was lost. Embarrassed by the increasing anarchy in Germany, he went to Italy in order to save at least the Apulian kingdom (1251). He subdued it once more, and conquered Naples; but the enmity of the pope, who had excommunicated him, foiled his efforts to reëstablish the imperial authority. Weary and disheartened, he fell a victim to a lingering disease, May 21, 1254, leaving only an infant 2 years of age (Conradin) as the last heir of the dynasty of Hohenstauffen.

CONRAD, Robert T., an American judge and poet, born in Philadelphia, June 10, 1810, died June 27, 1858. While studying law he wrote his first tragedy, entitled "Conrad of Naples," which was produced successfully in the principal theatres of the country. Admitted to the bar at an early age, he became connected with the press, and after other editorial labors began in 1822 the publication of the "Daily Intelligencer" newspaper, which was subsequently merged in the "Philadelphia Gazette." He was obliged by ill health to abandon the labors of daily editorship, resumed the practice of law in 1834, and was appointed recorder of the recorder's court in 1835, judge of the court of criminal sessions in 1838, and of the court of general sessions in 1840. He afterward resumed practice as an advocate, and was editor of "Graham's Magazine," contributor of leading articles to the "North American," president of an important western railroad company, and mayor of Philadelphia. While attending to his duties on the bench, he wrote the tragedy of "Aylmere," which was intended for Mr. Edwin Forrest, and was presented by that tragedian with eminent success both on the American stage and in the theatres of Great Britain. Its hero is Jack Cade, who takes the name of Aylmere while in exile in Italy, and is represented as a democratic patriot. Another tragedy by Judge Conrad, entitled the "Heretic," is in the possession of Mr. Forrest, but has neither been produced nor published. A volume appeared from him in 1852, under the title of "Aylmere, or the Bondman of Kent, and other Poems." The principal of the additional poems are the "Sons of the Wilderness," composed of reflections on the fate of the Indians, and a series of sonnets on the Lord's prayer.

CONRADIN, the son of Conrad IV., duke of Swabia, and the last of the Hohenstauffen, born in 1252, beheaded Oct. 22, 1268. His father dying while he was yet an infant, he resided sometimes in the court of Louis of Bavaria, and at other periods under his protection at the castle of Ravensburg. He formed an intimate friendship with Frederic, son of the margrave of Baden, and accepted the invitation of the Italian Ghibellines to place himself at their head. The greater part of the possessions of the Hohenstauffen had been swept away, and his stepfather, Meinhard II. count of Göritz, watched every opportunity to seize the remaining inheritance of the family, for Conradin was yet duke of Swabia, and held the ancient Franconian possessions of the Salic emperors. He was aided in his determination by Meinhard and Louis of Bavaria, who accompanied him into Italy to further their own selfish designs. The sale of a large portion of his possessions to these men enabled him to raise troops. In the autumn of 1267 he crossed the Alps with 10,000 men, and at Verona was warmly received by the Scala family, the chief of the Ghibelline party. His relatives here, persuading him to part with his remaining possessions at a low price, deserted him with their followers, leaving but 3,000 men. The Ghibellines, however, remained true to him. Verona raised a large army, Pisa a fleet, and Rome, whose pontiff was forced to flee to Viterbo, opened its gates to him. Conradin entered lower Italy, and at Tagliacozzo met the French army under Charles d'Anjou, on whom the crown of Naples had been bestowed by Pope Urban IV. He beat Charles back, and his men, supposing the victory won, dispersed in search of plunder, when they were attacked by the French and utterly routed, Aug. 23, 1268. Conradin escaped, but was betrayed into the hands of Charles at Astura, who caused him to be beheaded in the market place of Naples, the unfortunate prince being only 16 years of age.

CONSCIENCE, Hendrik, a Flemish novelist, the first in modern times to draw the attention of the literary world to the Flemish dialect as a cultivated language, born in Antwerp, Dec. 3, 1812. His education was very much neglected by his parents, but he read whatever books he could find. He entered the Belgian army as a volunteer, but advanced only to the rank of corporal. At the age of 25 he published his first novel, *In het wonderjaer* 1566 ("In the Year of Miracles"), Ghent, 1837, which was very favorably received. Though somewhat crude in conception and style, this novel gave evidence of considerable talent; the impressive manner in which it pictured the contrast between Spanish tyranny and German love of freedom stamped it as a demonstration in favor of the Flemish (German) party in Belgium. Of this party Conscience has since been considered one of the intellectual leaders. His second work, a collection of Flemish legends and poetry (*Phantasia*), appeared at Antwerp in the same year. A historical romance in 3 vols., *De Leeuw van Vlaenderen* ("The Lion of Flanders"), obtained for him a prominent place among modern novelists. Since then he has published a large number of novels, popular histories, and tales of an idyllic character. Of the latter class are: *Siska van Roosemael; Wat eene moeder lyden kan; De Loteling; Baes Gansendonck*, and others. Great simplicity and purity of conception, sound moral sentiment, and a natural quaintness of style, characterize the writings of Conscience; but he is less successful in the delineation of historical characters, or in the dramatic arrangement of his subjects. After leaving the military service, he had to struggle with great difficulties. To escape from a home embittered to him by a quarrelsome mother-in-law, he renounced all the comforts of life, and was successively employed as assistant in the archives of Antwerp, as gardener, and registrar of the academy of fine arts; and at length in 1845 he was appointed deputy professor at the university of Ghent, and afterward instructor of the Belgian princes in the Flemish language, King Leopold having befriended Conscience from the dawn of his literary career. Mr. Conscience is now (1858) commissioner of the administrative division of Courtray, and engaged in publishing his *Mémoires* in the *Revue contemporaine*. Translations of his writings have appeared in English, French, German, Danish, and Italian.

CONSCRIPT (Lat. *conscriptus*, written together), in Roman antiquity, the appellation of the senators, who were termed *patres conscripti* (conscript fathers), because their names were registered together. In recent times, and in continental Europe, it designates a compulsory recruit for the army or navy, the conscription corresponding to the Roman practice of *legere legiones* (selecting the legions). The whole Roman people were bound to military service, and classified according to their age and fitness for it. A law of the directory in 1798 organized this method of recruitment in France, according to which all Frenchmen between the ages of 20 and 30 are liable to serve in the regular army, and the selection from them is to be made by lot. A modified system of conscription has been established in Prussia since 1813, and in several other German states since 1848.

CONSIDÉRANT, VICTOR, a French socialist, born at Salins, near Besançon, in 1805, was educated in the polytechnic school in Paris, entered the army, and rose to the rank of captain of engineers. In 1831, having adopted the social theory of Fourier, he resigned his commission in order to devote himself to its advocacy. In 1832 he was engaged in an unsuccessful attempt to realize that theory at Condé-sur-Vesgre, about 40 m. from Paris. On the death of Fourier in 1837 he was recognized as the head of the societary school, as the body of his disciples called themselves, and became the chief editor of the *Démocratie pacifique*, a daily newspaper, which they established in 1845, and of the *Phalange* monthly review. During this period he wrote and published several books, of which the most important is the *Destinée sociale* (3 vols. 1834–'44), a systematic exposition of the societary system, written with clearness and eloquence. He also visited various parts of France, Belgium, Holland, and Germany, in order to disseminate that system by public discourses. On the outbreak of the revolution of Feb. 1848, he at once adhered to the republican party, and was chosen to the constituent assembly from the department of Loiret. In this body he rarely spoke; and on one occasion, being called upon by M. Thiers to state his views of social policy, he replied that as those views formed a complete science, they could not be set forth in an ordinary speech, but that he would gladly make them known to the assembly if they would give him 5 evening sessions for the purpose; the proposal was received with derision. In 1849 he was elected to the legislative assembly from the city of Paris; but taking part, on June 13, in the public demonstration, headed by Ledru-Rollin, in behalf of the Roman republic, then assailed by a French army, he was compelled to withdraw from France. For some time he resided in Belgium, but in 1853 visited the United States, and explored the west of Texas with a view to buying lands and introducing French emigrants there. In 1854 he was arrested in Brussels on a charge of conspiracy, but the charge was proved to be groundless, and he was released. A company was then organized in Paris for the realization of his emigration scheme; he bought lands in Dallas co., Texas, and a colony was sent out before the place was ready to receive them. The colony, in which no attempt was made to apply the societary theory, was a failure; but we believe the land speculation was not altogether unsuccessful. In 1858 M. Considérant, who is now a naturalized citizen of Texas, went to Europe on a visit.

CONSISTORY, in the Roman Catholic church, the college of cardinals, assembled in session. There are three kinds of consistories: the public, secret, and semi-secret. The first is held with great pomp and ceremony, the pope presiding in full pontificals. None but cardinals are present at the deliberations of the second. Consistorial advocates are lawyers admitted to plead on matters treated of in the consistory, *e. g.*, the canonization of saints, and they enjoy many privileges and emoluments.—Consistory, in English law, is the court held by each bishop for the trial and disposal of all ecclesiastical causes arising in his diocese. In some of the Reformed churches it designates an ecclesiastical tribunal, corresponding to a church session in the Dutch church, and in others to a presbytery.

CONSOLS, or THREE PER CENT. CONSOLIDATED ANNUITIES, the name of a considerable portion of the public debt of Great Britain, which was originated in 1751 by the union of various distinct annuities, bearing an interest of 3 per cent., to which additions have since been made from time to time.

CONSONANTS (Lat. *con*, together, and *sono*, to sound), those letters in an alphabet which cannot be sounded except by union with some one of a different class of letters termed vowels. They form the most characteristic part of words, and are less changeable than the vowels. The English language has 19 consonants with which alone it would be impossible to articulate a sound, but which joined with vowels multiply the intonations of the latter. They are divided into mutes and semi-vowels, and the former are distinguished according to the organs with which they are pronounced, as labials, linguals, and gutturals.

CONSTABLE (Fr. *connétable*, from Lat. *comes stabuli*, count of the stable), a title borrowed from Byzantine and old French usage, and designating in England and America a common law executive officer. The *connétable* or constable was the highest dignitary of the ancient French monarchy after the king, and had command of the army and precedence at court. The office was several times suspended, and was suppressed by Louis XIII. in 1627. Napoleon revived it, but it was again suppressed at the restoration. In England the office is as old as the conquest. The constable there, as in the United States, either acts ministerially, executing warrants issued by a justice of the peace; or he has original power as a conservator of the peace, by virtue of which he may arrest without warrant a supposed offender. The law protects him even if he be acting in error, provided he can show that a felony had been committed, and a reasonable suspicion that the party arrested had been guilty. The lord high constables of England and Scotland were anciently among the highest dignitaries of those kingdoms. The last person who held this office in England was Edward Stafford, duke of Buckingham, attainted of treason in 1521.

CONSTABLE, Archibald, a Scottish book publisher, born in Fifeshire, Feb. 24, 1776, died July 21, 1827. After serving an apprenticeship to a bookseller, in 1795 he opened a small shop in Edinburgh for the sale of old books and works on Scotch history and literature. In 1801 he undertook the publication of the "Scots Magazine" and "Farmer's Magazine." Upon the establishment of the "Edinburgh Review" he became its publisher, and continued so for 24 years. In 1804 he commenced the "Edinburgh Medical and Surgical Journal," and in the following year published the first of Scott's original works, "The Lay of the Last Minstrel." His offer of £1,000 to the poet for the copyright of "Marmion" was regarded as a piece of ruinous extravagance. With the exception of the first series of the "Tales of my Landlord," he published all of Scott's works down to the year 1826. Within the same period he published the works of Dugald Stewart and other eminent Scotchmen. He was also the proprietor of the "Encyclopædia Britannica," to which he published a supplement. In 1825 he projected and commenced "Constable's Miscellany," but a few months afterward he became bankrupt in the commercial revulsion of that year. His debts amounted to a quarter of a million sterling, for much of which Sir Walter Scott was liable.

CONSTABLE, John, an English landscape painter, born in Suffolk in 1776, died in London, March 30, 1837. In 1800 he was admitted a student of the royal academy. He had a thorough contempt for the conventionalities of the art, and when asked by Sir George Beaumont what style he intended to adopt, replied: "None but God Almighty's style." His pictures were simply and truthfully painted, and often represented some attractive or familiar phase of nature, not attempted by other artists. His subjects were rural landscapes with figures, and he was fond of depicting all the phenomena connected with rain storms, the effects of dew on the grass or foliage, and other transient minutiæ. Among the best of his works are: the "Valley Farm," in the Vernon gallery, and the "Corn Field," in the national gallery. In 1829 he was elected a royal academician. The "Memoirs" of Constable by C. R. Leslie, R. A., was published in 1842.

CONSTANCE (Ger. *Konstanz*, or *Kostnitz*; anc. *Constantia*), a city of Baden, capital of the circle of the Lake, on the S. shore of Lake Constance, or rather on the narrow channel which connects that sheet of water with its S. arm, the Untersee, 78 m. E. N. E. from Basel; pop. 6,500. It is walled and defended by towers and a ditch. The most interesting buildings are the cathedral, with its magnificent high altar, and its 16 pillars, each composed of a single block, supporting the nave; the church of St. Stephen, built in 831; the merchants' hall, once a Carthusian monastery, containing the room in which the council of Constance held its sessions; the bishop's palace: and an old Dominican monastery on the island of Geaf. The city abounds in memorials of John Huss and Jerome of Prague, who were executed here, is the seat of various public departments, and contains a number of excellent educational establishments, a lyceum, a hospital, and a theatre. The manufactures, which declined from the period of the reformation, are now reviving, and embrace cotton cloth, yarn, silk, musical instruments, clocks, and watches. Fishing, navigation, and agriculture employ numbers of the inhabitants. The trade is considerable, and constant steam communication is kept up with other towns on the lake. A long covered wooden bridge connects the city with the suburb of Petershausen on the opposite shore. Constance was formerly a free imperial town, but was annexed to Austria in 1549, and by the latter ceded to Baden in 1810.—Lake Constance (Ger. *Boden-See*; Lat. *Lacus Brigantinus*) is a large lake in the S. W. of Germany, forming a centre in which Switzerland, Austria, Bavaria, Würtemberg, and Baden meet. It lies between lat. 47° 28′ and 47° 50′ N., long. 9° and 9° 42′ E., is 40 m. long from N. W. to S. E., about 9 m. wide, 290 sq. m. in area, and 964 feet in maximum depth. It is divided into the upper and lower lakes, the former being the larger, and the latter being subdivided into the lower lake, or Untersee, and Lake Zell, or Zellersee. The Rhine enters the lake at its S. E. end, and leaves it at Stein at the N. W. extremity, while upward of 10 other streams empty into it. Its waters are dark green, very clear, and seldom wholly frozen over, the only known instances being in the years 1695, 1830, and 1841. They are subject to sudden risings, which have never been satisfactorily explained. Its shores are flat or gently undulating, fertile, highly cultivated, and dotted over with picturesque towns, villages, and ruined castles, but are not remarkable for natural scenery. Commerce is carried on by steamers and sailing vessels on the lake, and 2 railways terminate on its N. shore.

CONSTANCE, COUNCIL OF, held its first meeting Nov. 16, 1414, and was closed April 22, 1418. There is scarcely any point in the ecclesiastical history of the Catholic church, especially in the history of her councils, possessing so deep and so general an interest as this council. The doctrine of the superiority of the pope over the council was put rudely to the test, hence the conservative sympathies of Catholicism are warmly interested in the debates of the Constantian doctors, and their results; the principle of the supreme power of the general council was held and openly professed by many of these doctors, so that Gallican writers have dwelt earnestly and anxiously upon its proceedings; while the Protestant would find the first germs of the reformation in the prevailing spirit of the times, and the forerunners of Luther in 2 at least of the actors, John Huss and Jerome of Prague. The object for which the council assembled was to find a remedy for the great western schism, which was occasioned by the residence of some of the popes in Avignon, France. Gregory XI. returned to Rome, Jan. 17, 1377. At his death in 1378, the Romans loudly demanded a pope who should be a Roman by birth, and the cardinals so far yielded to their request as to elect Urban VI., an Italian, though not a Roman. This half-way measure irritated the French cardinals, 12 of whom went to Anagni, and protested there that the election of Urban VI. had not been free, and that they had acquiesced in it only through fear of violence on the part of the Roman people. They went then to Fondi, and having been reënforced by three Italian cardinals, they created Robert of Geneva pope, who took the name of Clement VII., and fixed his residence in Avignon. This was the origin of the schism which left the world in doubt as to who was rightfully in possession of the papal chair. Boniface IX., Innocent VII., and Gregory XII. succeeded Urban VI., while Clement VII. was succeeded by the celebrated antipope Cardinal Peter de Luna, who took the name of Benedict XIII., and who continued to maintain his claims to the papacy against all comers for 30 years, until his death in 1424. Gregory XII., previously known as Angelo Corario, swore at his election in 1406 that he would, if called upon, resign the papacy, provided Peter de Luna would do the same. The attempt was made to put an end to the schism, by getting both claimants to resign, and electing a third, upon whom all could agree as the real pope. A council was accordingly held at Pisa in 1409, Gregory and Benedict were both deposed, and Alexander V. elected in their stead. But as Benedict would not resign on any condition, and as Gregory maintained that he had only promised to resign in the event of Benedict's doing the same, the astonished world now found itself called upon to choose among 3 claimants to the pontifical office. Peter Philargi, or Alexander V., died in 1410, and was succeeded by the ambitious cardinal Baltasar Cossa, who called himself John XXIII. It was he who opened the council of Constance, composed in the beginning of 15 cardinals, 2 patriarchs, 23 archbishops, 27 bishops, and a great number of inferior clergy. Ambassadors came from the kings of France, England, Castile, Aragon, Navarre, Sweden, Poland, Cyprus, and others, beside representatives of the knights Teutonic and hospitallers, and the delegates of many universities. The emperor Sigismund assisted in person, and, dressed as a deacon, he sang the gospel of the first mass on the Christmas following the opening of the council. Before its conclusion, ambassadors arrived from Manuel Palæologus and the patriarch of Constantinople. Forty-five sessions were held altogether, the last one 3½ years after the first, that is, April 22, 1418. John XXIII. presided at the 1st session, and was called upon to resign the papacy. In the 2d session he promised under oath to do so, for the sake of peace, provided Angelo Corario, or Gregory XII., and Peter de Luna, or Benedict XIII., would do the same. But on the night following, John, disguised as a rustic, fled secretly from Constance to Schaffhausen. After much perplexity and confusion, negotiations were opened with John to bring him to the desired abdication; but in the midst of them, fearing that he might be besieged by the king of the Romans, he fled on Good Friday to Freiburg. The fathers were at a loss what to do. The able and celebrated Gerson, chancellor of the university of Paris, urged them not only to call before them all persons even of papal dignity, which they had already done, but to declare the superiority of the council over the pope, and proceed to his deposition, whether he consented or not. Others wished Sigismund to bring John by force to the council, which, however, the emperor declined doing, on the plea that he was not sure whether that course would be acceptable to all or not. John complicated matters still further by leaving Freiburg, to which place, however, he returned, and reopened negotiations with Constance. A severe investigation into his past conduct was going on there, which exhibited him in exceedingly dark colors. John yielded at last, and in May, 1415, he resigned the pontifical honors; and that no further trouble might arise, he made a public and solemn declaration, that he gave up of his own free will all claim to them for ever. Baltasar Cossa bore his degradation with sufficient dignity, and submitted even to be confined in a prison near Constance, where, singularly enough, the ex-pontiff was housed with the innovator and reformer John Huss, waiting for judgment at the hands of the same council who had stripped his fellow prisoner of the tiara. There was less trouble with Gregory XII. than there had been with the so-called John XXIII. Gregory was, unlike John, a man of irreproachable morals; he was sincerely desirous of peace, and willing to make any sacrifice to secure it. On June 15, while the 13th session was being held, Carlo Malatesta, prince of Rimini, which was then the residence of Gregory, entered Constance with a splendid retinue, and, to the great joy of the fathers, announced that he came as Gregory's legate, to make in his name a free and full renunciation of the papacy, so that tranquillity might be restored to the church. The action of Gregory began by solemnly convening the council as the supreme head of the church. Catholic writers, therefore, with the exception of some Gallicans, consider the council to have been lawfully assembled only from this point, and its decrees to have been made binding by the subsequent action of Pope Martin V., who approved by a bull of all that the assembly had done *conciliariter*, saying nothing of its other proceedings. The Catholics likewise consider Gregory as the real successor of Urban VI., and therefore as the real pope, and Baltasar Cossa and Peter de Luna as antipopes. In the confusion of the times, however, it is certain that good Catholics were divided among the 3 obediences, or parties of the 3 pontifical claimants, holding in good faith that the chief they followed was the true pontiff. The plan of the council was to secure beyond cavil its own legitimacy, by the joint consent of the 3 to its convocation, and to settle the papal difficulty by obtaining a spontaneous resignation from all the claimants of the tiara, and then electing a new pope, upon whom all could agree. In the 14th session, July 4, Gregory completed the good work he had begun by resigning, through Carlo Malatesta his legate, all claim to the pontifical throne. The council proceeded afterward with rather less ceremony to get rid of Peter de Luna, the so-called Benedict XIII., calling upon him summarily to resign. But the negotiations opened with him were fruitless, and several personages, both ecclesiastical and royal, and even Sigismund himself, attempted to bring the matter to a close in vain. Peter had fled to a strongly fortified peninsula called Peñiscola, in Valencia, and time passed on without any thing satisfactory being heard from him. This antipope, a man endowed with indomitable resolution, and many noble and virtuous traits of character, persisted in calling himself pope even when all his followers had abandoned him, and finally died in his schism, at Peñiscola, Feb. 17, 1424. The council, after waiting 100 days for him to come to some arrangement with them, condemned him publicly as an inveterate "schismatic, heretic, and scandalous sinner," and proceeded to the election of a new pope. The cardinals announced, on Nov. 11, at noon, that their choice was made, and the clergy and laity of all the 3 obediences now joined in doing homage as pope to Cardinal Otho Colonna, who, in honor of the saint of the day, took the name of Martin V. The council held many sessions for the examination of the doctrines of Wycliffe, which they condemned, commanding his books to be burnt, and his bones to be disinterred. John Huss, a Bohemian priest, had caused much excitement in Germany and Bohemia, by his reproduction of Wycliffe's teachings, that the church consisted only of those predestined to glory, that jurisdiction was lost by magistrates, whether lay or clerical, with the loss of grace, &c. He came to the council on the faith of a safe-conduct from the emperor Sigismund, and was examined at great length. He resisted all inducements, threats, and censures, and excommunication itself, and persisted in asserting the doctrines he had preached in Bohemia. The council finally condemned his doctrines and his books, ordered him to be degraded from the priesthood, and handed him over to the secular magistrates of Constance, by whom he was burnt alive. His disciple, Jerome of Prague, after having retracted his anti-Catholic doctrines, and relapsed, met with a similar fate the following year (1416).

CONSTANS, emperor of Rome (A. D. 337-350), son of Constantine the Great and Fausta, divided the empire after the death of his father with his brothers, Constantine II. and Constantius II., receiving for his share Illyricum, Italy, and Africa. Constantine, who invaded his provinces, having been slain in the battle of Aquileia, Constans became emperor of the whole West. He was weak, profligate, and rapacious. His misrule caused an insurrection in Gaul under Magnentius; he fled to Spain, but was overtaken at the foot of the Pyrénées by the soldiers of the usurper, and slain. Constans protected the creed of Nice against the Arians and the Donatists, and closed the pagan temples.

CONSTANT DE REBECQUE, HENRI BENJAMIN, a French publicist and orator, born at Lausanne, Oct. 25, 1767, died in Paris, Dec. 10, 1830. He descended from a family of French Protestant exiles in Switzerland, attended the universities of Oxford, Erlangen, and Edinburgh, became acquainted with many of the learned men of England and the continent, married a German lady, officiated for some time as chamberlain of the duke of Brunswick, formed an intimate friendship with Madame de Staël, which lasted for life, and repairing to Paris in 1795, published in the following year his first pamphlet, *De la force du gouvernement actuel de la France, &c.*, which attracted considerable attention. Other pamphlets, several articles in the newspapers, and a petition which he presented at the bar of the council of 500 in behalf of exiled Protestants, added to his reputation. He aided in the formation of the republican club of Salm, established in opposition to the royalist club of Clichy, became its prominent orator, and eventually a member of the tribunate; but his systematic opposition to the consular government caused him to be expelled from France along with Madame de Staël. He soon met her again at Weimar, where they became acquainted with Goethe and Schiller, and afterward at M. Necker's seat in Switzerland, Coppet, where the brilliant conversation of Madame de Staël and of Constant, who almost excelled her in conversational power, drew around them a coterie of the most eminent opponents of Napoleon. About this time he translated Schiller's *Wallenstein* into French, and wrote the novel of *Adolphe*, which is by many considered his best literary production. After his departure from Coppet he repaired to Göttingen; and having been divorced from his first wife, he married a widow nearly related to Prince Hardenberg. Once more he found himself among the German aristocracy, and this time among the enemies of his adopted country. He then wrote his celebrated pamphlet, *De l'esprit de conquête et de l'usurpation*, which was published in 1814, when Napoleon's power was gone. Its success was great, and ingratiated him still more with the European sovereigns, some of whose proclamations were ascribed to Constant's pen. He returned to France in the wake of the invading armies, and could be seen, with the son of Madame de Staël, in the carriage of Bernadotte, the prince royal of Sweden, when the procession of the conquerors passed through the streets of Paris. Espousing the cause of the Bourbons, he was elected to the chamber of deputies, where, however, he made some show of opposition to reactionary measures. Having published in the *Journal des débats* a violent article against Napoleon, on the very day before his reëntry into Paris, Constant left the city in fear of his resentment. Napoleon, however, far from prosecuting him, invited him to the palace, received him with the greatest cordiality, and appointed him a councillor of state. The fickle politician accepted the appointment, and now became Napoleon's friend. In conjunction with M. Molé he framed the famous *acte additionnel* to the constitution of the empire, which gave satisfaction to nobody, only detracting from the power of the sovereign without increasing the liberties of the people. After the battle of Waterloo, Constant retired to England, being included in the proscription list of July 24, 1815. He was allowed to return, however, by royal decree of Sept. 5, 1816. He now joined the writers of the so-called liberal school, and was one of the founders of the *Minerve*, a periodical started in opposition to the *Conservateur* of Châteaubriand and other royalists. In a series of *Lettres sur les cent jours*, he attempted to explain his conduct during that period, but with little effect. In 1819 he was elected by the department of the Sarthe to the chamber of deputies; and here he made brilliant speeches on every important question, while he supported at the same time his opinions through the press. His experience secured him a great influence over his party, and for several years he was their principal leader. He refused to come to an understanding with the semi-liberal cabinet of Decazes, opposed Richelieu during his second ministry, but evinced all his capacity against the ultra-royalist administration, headed by Villèle. His speeches during this period are masterpieces of logical discussion and keen irony. They are moreover remarkable as literary productions; although he rarely spoke without preparation, he was gifted with a wonderful facility of composition. In his long struggle against Villèle's reactionary measures, he exhausted nearly all his energy, and toward the end of the restoration his health began to fail. He was in the country, and still suffering from a surgical operation, when the decrees which brought on the revolution of July were published. "We are now playing here a terrible game," his friend Vatout wrote to him; "our heads are the stakes; come and bring yours." The contest was over when he arrived in Paris, and he had only to concur in the proceedings which placed the crown on the head of Louis Philippe. He was himself appointed presiding officer of the council of state, and at the same time he put himself under pecuniary obligations to the new king. A confirmed gambler, he was frequently involved in difficulties, and Louis Philippe put 200,000 francs at his disposal. Constant, in accepting this offer, said: "It is on condition that I keep my liberty of speech." "Of course," replied the cunning prince, "I understand it so." He continued in the chamber of deputies, but his prestige was gone, and he uselessly raised his voice on several occasions. Another disappointment marred his later days: he had presented himself as a candidate to the French academy, and was not elected. Grief probably hastened his death. Benjamin Constant was not merely a politician; philosophical and historical studies had occupied much of his time, and just before dying he completed an important work, *De la religion considérée dans sa source, ses formes, et ses développements* (Paris, 1823–'31, 5 vols.). He left beside *Du polythéisme Romain considéré dans ses rapports avec la philosophie Grecque et la religion Chrétienne* (Paris, 1833).

CONSTANTIA, a small village, a few miles from Cape Town, S. Africa, noted for its wine. There are 2 kinds, the red and the white; yield, from 8,000 to 12,000 gallons annually.

CONSTANTIN, Abraham, a Swiss painter on porcelain, born in Geneva in 1785. He was originally an ornamenter of watch dials, but upon going to Paris devoted himself to painting on porcelain. His first work, a copy of Raphael's *Madonna della seggiola*, was executed for the empress Josephine. He afterward spent many years in Italy in close study of the works of Raphael, of whose style he became a successful imitator. In 1832 he was commissioned by Louis Philippe to make copies of Raphael's chief works in the Vatican, in the execution of which he carried the art of enamel painting to a perfection never before attained. The "Transfiguration" alone occupied him a year. He has also made copies of the masterpieces of Titian, Correggio, and others, and in a few instances has attempted original compositions and portraits from life, which are highly prized. His best works are in the museum at Sèvres, for the national factory of which place he has executed many commissions, and in the royal collection at Turin. Constantin has made some valuable discoveries in the mechanical processes of his art, particularly with reference to the effect of burning upon the colors.

CONSTANTIN (or CONSTANCE) FAULCON, also PHAULCON or PAULCON, a Greek adventurer, born at Custode, a village in the island of Cephalonia, in 1648, put to death in Siam in 1688. Engaged in commercial ventures in the East Indies, he was several times shipwrecked, and on one such occasion, when thrown on the coast of Malabar, he met an ambassador of the king of Siam, who had likewise been shipwrecked. Constantin afforded him every assistance, helped him to reach Siam, and in return for these services he received an appointment at the court of Siam. After the death of the prime minister, Constantin became the ruling spirit of that country. In order to strengthen his position he sought the assistance of France. Louis XIV. despatched the chevalier de Chaumont as ambassador to Siam, while Siamese ambassadors were sent to France. In the meanwhile the jealousy of the Siamese statesmen against the influence of Constantin, and their hatred of the French, had fearfully increased. The luckless adventurer was arrested, subjected to cruel tortures, and executed.

CONSTANTINE, one of the 3 great administrative and military divisions of Algeria, bounded N. by the Mediterranean, W. by Tunis, E. by the province of Algiers, from which it is separated by Cape Corbelin, and S. by territories inhabited by various native tribes; area, 109,200 sq. m.; pop. 27,382 Europeans (15,967 French, 4,664 Maltese, 3,341 Italians, 1,522 Spaniards, 857 Germans, 419 Swiss, 612 various nationalities), and 41,865 natives; total 69,247. The area under cultivation in 1854 was estimated at 500,000 acres. The planters of tobacco, from 537 in 1851, had increased to 2,320 in 1854, and the land planted from 1,100 acres to 6,000 acres. The production of cotton is still in its infancy, but amounted in 1854 to 50,000 lbs. Another article of trade which promises to become of considerable importance is oil. The coral fisheries employ on an average 150 to 180 boats per annum, and the approximate value is from $300,000 to $400,000.—CONSTANTINE, or CONSTANTINA, the capital, is the seat of the provincial, civil, and military authorities; pop. in 1856, 35,865, of whom 4,462 were Europeans. It stands on an isolated eminence, well fortified by nature and by art, and contains a citadel. On 3 sides are ravines, across one of which stretches a Roman bridge. The houses are mostly of brick and stone. There are some Roman remains of considerable interest, and a good trade is carried on with Tunis and the countries southward. In ancient times the site on which Constantine now stands was occupied by a great city called Citra, the capital of the Numidian kings. It was plundered and almost totally destroyed in 311. Constantine afterward rebuilt it and gave it his name. It shared the fortunes of Algiers from that period up to the occupation of the province by the French in 1830, and in 1837, after a long protracted siege, was taken by assault. Five agricultural colonies are established in the vicinity of Constantine, which yielded in 1855 $100,000 worth of grain. Constantine is connected by telegraph with Philippeville, and has an active trade in grain, wool, groceries, and fruits. Manufactories of various articles begin to flourish, several specimens of native skill having received premiums at the great Paris exhibition of 1855.

CONSTANTINE, CAIUS FLAVIUS VALERIUS AURELIUS CLAUDIUS, surnamed the Great, a Roman emperor (A. D. 306–337), born in 274 at Naissus in Upper Mœsia, died at Constantinople in 337. His father, Constantius Chlorus, was in 292 appointed Cæsar or lieutenant-emperor of the western portion of the empire, which at that time was divided between the 2 Augusti, or emperors, Maximian and Diocletian. Constantine, a youth of fine appearance and great physical strength and courage, was sent to serve under Diocletian as a hostage for his father's loyalty. In several campaigns in Egypt and Persia he rose to the rank of tribune. When in 305 Diocletian and Maximian retired into private life, Constantine, who had every thing to fear from the jealousy of the new eastern emperor Galerius, took refuge with his father, who had succeeded Maximian as emperor of the West. He followed him to England, where Constantius died in 306. The army immediately proclaimed Constantine emperor, but Galerius disapproved of the choice, and recognizing Constantine as lieutenant-emperor, appointed Severus emperor of the West. While Constantine protected Gaul and the Rhenish frontier against the invasions of the warlike Germans, violent struggles arose at Rome between Severus and Maximian's son Maxentius, who had been elected emperor by the people and army. Maximian himself, having become tired of private life, once more laid claim to the imperial purple. He had Severus assassinated, but was overcome by his own son and compelled to seek refuge with his son-in-law Constantine, whose aid he endeavored to obtain by promising him the succession. Constantine, while preparing to comply with Maximian's request, became aware that he himself was secretly conspired against by his treacherous ally, whom he now in 310 compelled to commit suicide. Maxentius, in order to avenge his father's death, was about to set out for Gaul, when suddenly Constantine, very much like Cæsar under similar circumstances, led his legions to Italy, and, in spite of tremendous odds, triumphantly entered Rome. There he was greeted as emperor by the senate, Maxentius having been accidentally drowned. It was during this campaign that Constantine, while encamped near Mentz, is said to have beheld in the sky a flaming cross, bearing the inscription: 'Εν τουτῳ νικα ("With this you will conquer"). From that time the symbol of Christianity appeared on the shields of the soldiers and the banners of the Roman army. In the mean time Galerius, who still assumed supreme authority, had appointed Licinius emperor of the West, but Constantine made common cause with him. Galerius died in 311; his successor Maximin was defeated by Licinius, and thus in 313 the empire was once more divided between 2 rulers, Constantine for the West and Licinius for the East. The next year Constantine attempted to overthrow Licinius, but could only wrest Illyria from him. A peace of 9 years followed, during which Constantine patiently consolidated his power by radical reforms in the civil, military, and judicial administration. At last, in 323, he was ready to realize his desire to reunite the whole empire. He took the field against Licinius, defeated him in 2 battles at Adrianople and Chalcedon, compelled him to surrender, and, in spite of a solemn promise to spare his life, condemned him to an ignominious death. —It is in vain that zealous writers have tried to relieve Constantine's reputation from the crimes committed to satisfy his ambition. However they may have succeeded in vilifying the character of his competitors, it is nevertheless true that he himself was not their better in moral qualities. His father-in-law, his brother-in-law (Licinius), nay, his own son Crispus, his nephew (the son of Licinius), a boy of 11 years, and lastly, his wife Fausta, were successively his victims. It is said by Zosimus and Sozomenus that he became a convert to Christianity only because the pagan priests refused to absolve him from those crimes, but not much reliance is to be placed on this assertion. Constantine's character scarcely warrants the belief that he was seriously troubled by remorse, nor is it to be supposed that the pagan priests at that time were over scrupulous in regard to the sins of emperors. As a statesman and politician, but scarcely from religious motives, Constantine favored and protected Christianity, though he was baptized only on his death-bed. He conceived that the vast structure of a centralized empire, comprising almost the whole civilized world, was not to be built upon the decaying remnants of paganism. A new and vigorous principle, which, by inculcating obedience to existing authorities, seemed admirably adapted to the wants of absolute monarchism, was to instil new life into the Roman empire. This may have been Constantine's idea. As early as 312 he granted absolute toleration to the Christians, and restored to them the property confiscated by his predecessors. Sunday was set apart for religious exercises, and every attempt to restrain the religious liberty of Christians was severely punished. By convening and attending the general council at Nice (325), Constantine openly declared the Christian to be the official church of the empire. The removal of the seat of government from Rome to Byzantium was another great measure by which he intended to strengthen the empire. New Rome was to be the name of the new capital, but the name of Constantinople prevailed. All vestiges of republican forms were extinguished by Constantine; while, in the administration of affairs, he with an iron will brought order out of chaos, and constructed a powerful machinery of government by separating the civil from the military administration, but uniting both in the hands of the sovereign, he made his court outshine in splendor and magnificence even those of the oriental princes, and created a hierarchy of officials which to this day has remained the model of European monarchical courts. The very titles still in use, such as "excellency," "right honorable," "serenity," also "duke," "count," "viscount," may be attributed to Constantine. A standing army of 300,000 men and 29 naval squadrons supported the imperial authority. Heavy impositions upon the people were necessary to cover the enormous expenses, but the introduction of a regular financial system, and a just distribution of the taxes, made them appear less onerous than they would otherwise have been. With the exception of a brief war in 332 against the Goths, occupying the present Danubian principalities, the reign of Constantine after the reunion of the empire was a peaceful one. He was preparing a war against Persia when he suddenly fell ill, and died on the day of Pentecost, after having been baptized by the bishop of Nicomedia. He was buried in the church of the apostles at Constantinople. There is scarcely any personage in history who has been judged so differently as Constantine. If the distinction between a great prince and a great man holds good, he may however be safely set down as the former. He was endowed with quick perception, vast ideas, great activity of mind, tenacity of purpose, and energy in action; but of true moral and religious sentiment he would seem to have been devoid. Still, to judge him correctly, it is necessary to bear in mind the state of society at his time. Eutropius says of him that his character was most excellent during the earlier, but indifferent during the latter part of his reign.

CONSTANTINE VII., surnamed Porphyrogenitus, emperor of the East, born 905, died 959. On the death of his uncle Alexander in 912, he became emperor under a council of regency. He had a great fondness for literature, which he cultivated, while his father-in-law, the usurping Romanus Lecapenus, who was proclaimed emperor Dec. 17, 919, administered the affairs of the empire. In 945, after the death of Lecapenus, he became sole emperor, but he still devoted himself to literature, leaving the cares of state to his wife Helena. He is said to have been poisoned by his son Romanus, who succeeded him as the 2d of this name. His writings are chiefly valuable as illustrations of his time.

CONSTANTINE NICOLAEVITCH, grand duke and grand admiral of Russia, brother of the emperor Alexander II., born Sept. 21, 1827. His father, the emperor Nicholas, who made him grand admiral at the age of 4 years, appointed as his tutor the captain, afterward admiral, Lütke, an excellent seaman. Beside naval science and other branches of knowledge, Constantine eagerly pursued the study of languages, acquiring a great facility in the German, French, English, and Turkish. Notwithstanding this modern education, his predilection for every thing Russian made him the favorite of the national or orthodox part of the Russian nation, and frequent rumors, both in Russia and abroad, represented him as the object of secret illegitimate hopes. Anecdotes were current which made it appear that a deviation from the natural order of succession, like that which had given Nicholas the throne due to his elder brother, was an idea not unthought of at the court of St. Petersburg. By the public at large, a high opinion was entertained of Constantine's character and abilities. As admiral, he once had the crown prince arrested for entering his ship without leave, for which act, however, he received an equal punishment from their father, the emperor. In 1845 he visited Constantinople, the first prince of the imperial house of Russia who ever appeared in the capital of the sultans. Abdul Medjid received him with every mark of distinction, though his Greek subjects seemed to betray their belief that this Russian Constantine was the one destined, according to a prophecy, to restore what was founded under a Constantine and lost under a Constantine. In 1847 he started on the Ingermanland, a ship of the line launched under his direction at Archangel, on a voyage across the Baltic, North sea, Atlantic, and Mediterranean, to Palermo, where his mother was at that time residing. On this occasion he visited London, where the people were astonished to find that a Russian prince could look like a German student, and wear spectacles. After having visited Naples and Rome, he returned home by land. In Germany he was betrothed to a princess of Saxe-Altenburg, who next year became his wife, and, with the Greek faith, received the name of Alexandra Josefovna. In 1849 he accompanied Paskevitch on his expedition to Hungary. Here, too, in the last days of the Hungarian struggle, and after the surrender of Vilagos, he was the object of hope with a part of the nation. Owing, perhaps, to some not unintentional hints of the Russian generals, and even to negotiations attempted shortly before the catastrophe, rumors were current, both in the Russian camp and throughout the country, that Constantine would save the independence of Hungary, by making himself its constitutional king, with the aid of the Russian army, as well as of the patriots, who would prefer any thing to the rule of Austria. In a similar way his name has at different times been connected with dreams of a restoration of Poland. In the late war he was intrusted, together with Lütke, who had also accompanied him on his journey, with the defence of the Baltic. But the policy of caution, which seems to have been commanded by the circumstances, hardly allowed the prince any display of courage or ability. As Constantine was regarded during the war as the representative of the national party in the council of his father, apprehensions were entertained, at the death of Nicholas, that this party might become dangerous to the new reign, which promised to be peaceful. But all the apprehensions, as well as hopes, based on the supposed great ambition or great abilities of the prince, have thus far proved ill-founded. Constantine has shown himself as sincerely attached to the interest of his brother Alexander as he was to the policy of his father. In 1857 he paid a visit to the courts of England and France.

CONSTANTINE PAULOVITCH, grand duke of Russia and governor of Poland, 2d son of Paul I. and Maria Fedorovna, princess of Würtemberg, and brother of Alexander I. and Nicholas I., born May 8, 1779, died June 27, 1831. His grandmother, Catharine II., who is supposed to have destined him to reign over a new Greek empire which she was engaged in conquering from the Turks, and therefore to have chosen for him the name of the first Byzantine emperor, gave him a most careful education under the supervision of Nicholas Saltikoff, and chose La Harpe, a celebrated Swiss, for his as well as Alexander's tutor. But Constantine, who had more than his brother of the gloomy, stubborn, and wild character of his father, was little influenced by this liberal system of education. Military accomplishments alone attracted his rash and impetuous spirit. In 1796 he was married to Juliana, princess of Saxe-Coburg, who, after a few years of unhappiness, left him and returned to Germany. In 1799 he shared in the campaign of Suwaroff in Switzerland. After the violent death of his father (1801), which he warmly condemned, he evinced a sincere love for his brother Alexander, by faithfully sharing the toils and dangers of his campaigns. He commanded under Bennigsen in the battle of Austerlitz (1805), but exhibited little military skill, and exposed his troops by imprudence. Nor was he personally more remarkable in the war which was terminated by the peace of Tilsit (1807), during the French invasion (1812), or in the campaigns of Germany and France, which followed. He accompanied Alexander to Paris in 1814, whence he was sent to Warsaw to announce to the Poles the promised restoration of a Polish kingdom, and was present at the congress of Vienna in 1815. The duchy of Warsaw having been transformed into a kingdom and annexed to Russia, Alexander gave it a constitution "which was too good to be observed," and appointed Constantine commander-in-chief of the reorganized Polish army, with extensive privileges which virtually made him viceroy of Poland, while Zajonczek was its civil governor. Having conceived a passionate love for a young Polish lady, Johanna Grudzinska, Constantine was allowed by the decree of the holy synod of Russia, not without an infringement [illegible] the rules of the orthodox church, to divorce [illegible] wife, who had lived 20 years apart from [illegible]: but he sacrificed, for the intercession of [illegible]der in this affair, and for his permission [illegible]y the object of his love, his own claims [illegible]nptive to the throne. Alexander [illegible] sister-in-law princess of Lowicz, [illegible] upon her the domains of that name, accepted, Jan. 14, 1822, the formal resignation of Constantine as heir to the crown, in [illegible] of Nicholas. This acceptance was begged [illegible] Constantine as a favor, on the ground [illegible] own inability to govern an empire. The [illegible]ent of affairs in Poland proved this in[illegible]; but the distemper of Alexander in [illegible] years of his reign, and his desertion [illegible] liberal principles he had manifested at [illegible] earlier period, contributed to the misrule [illegible] brother. The charter of the new kingdom [illegible] soon violated, the freedom of the [illegible] more and more circumscribed, a secret [illegible] and espionage most systematically intro[illegible] [illegible]ons were suppressed, and [illegible] officers, who had won [illegible] under the banners of Kosciuszko, [illegible]ski, Poniatowski, and Napoleon, were [illegible] from the ranks by the insulting treatment [illegible]tine, who also tortured his army by [illegible]t exercises and capricious discipline. [illegible]ded in making his troops the best [illegible] in the world, but alienated the affection [illegible] soldiers, and of the pupils in the military [illegible] as well as of the people. The material [illegible] of the country, however, were effi[illegible] promoted; agriculture, commerce, and [illegible]y began to prosper, high roads and canals [illegible] constructed, and Warsaw and other cities [illegible]d with public buildings. But secret as[illegible]ons, affiliated with those of France and [illegible], and undetected by the thousands of spies, [illegible]ermined the whole political structure. Af[illegible] the death of Alexander in 1825, Constan[illegible], though proclaimed emperor in his absence [illegible] a revolutionary movement in St. Petersburg, [illegible]fully adhered to his resignation, and even [illegible]onally assisted at the coronation of Nicho[illegible] at [illegible]scow. Having become more inde[illegible] under the new reign, he still further [illegible]d the spirit of the people by his con[illegible] persecution of conspiracies, which were [illegible]titious, his most important duty being [illegible]tation with the police, regularly com[illegible] at 4 o'clock every morning. Poland [illegible]ully prepared for the revolution when the [illegible]reaks of Paris and Brussels in 1830 gave the signal. On the evening of Nov. 29, a small band, consisting mostly of cadets, attacked the palace of Constantine, called Belvedere, near Warsaw. As he was, as usual at that hour, asleep, his disciplined domestics hardly dared to arouse him, and blood flowed in the palace before he awoke and escaped. At the same time the barracks and arsenal were attacked, the whole capital rose, the Polish troops mostly joined the citizens, and the Russians retired beyond the Vistula. Constantine, who was quite confused, now entered into negotiations with the council of administration in Warsaw. To their propositions for reconciliation with the emperor, which included the reëstablishment of an inviolable charter, and the annexation of Lithuania to Poland, he gave a wavering answer, promised to do his best with the emperor, and was allowed to retreat with the Russians unmolested to the frontier, while the Polish guards, who at first accompanied him, returned to join the insurrection. He regretted only the loss of these favorite troops, retreated hesitatingly, frequently declaring his love for Poland, and even drilled small detachments of troops, now commanded by revolutionary officers, whom he met on their march to the capital. On the arrival of the army under Diebitsch, he commanded the reserve, but evinced little interest in combating the Poles. He is even said to have taken pride in their victories, and to have sung, after the last battle of Grochow, in March, 1831, the Polish revolutionary air, *Jeszcze Polska*, &c., in the hearing of the defeated Russian commander. Recalled by the emperor, he retired to Bialystok, but was soon compelled to leave this place on the approach of the Poles under Chlapowski, his brother-in-law. As his presence at the court of St. Petersburg, for personal as well as political reasons, was not desirable to Nicholas, who owed him his throne, he remained at Witebsk, where, on June 27, having drunk a cup of tea, he was suddenly seized with horrible pains, which soon proved fatal. The journals of St. Petersburg attributed his death to the cholera, popular rumors to poison. His wife did not long survive the loss of her husband; consumed with grief, she died at Tzarskoe Selo, on the first anniversary of the revolution.

CONSTANTINOPLE (Turk. *Istamboul* or *Stamboli;* Slavic, *Carograd*), the Turkish capital, situated on the south-western entrance of the Bosporus, upon a triangular peninsula formed by the Golden Horn (the harbor of Constantinople), an inlet of the sea, and the sea of Marmora. We have already described the origin and the history of this city down to A. D. 330, when Byzantium merged into Constantinople. (See Byzantium.) Afterward it became the capital of the Roman, or from 395 the Byzantine empire, and of the ephemeral Latin empire (1204–1261). In A. D. 413 an earthquake destroyed it, when it was rebuilt by Theodosius II. Its size and population under the Byzantine emperors may be judged from the fact that once, in the 8th century, 300,000 of its inhabitants fell victims to a pestilence. On May 29, 1453, Constantinople was stormed by the Turks, the last Byzantine emperor, Constantine XI., having lost his life in the defence, and since that time it has remained in their possession undisturbed. It is the seat of government of the Turkish empire, and the residence of the Greek and Armenian patriarchs. Its population, including all its suburbs, 15 in number, some of which are more like separate cities, was, in 1848, according to the official tables of the board of health of that year, estimated at 778,000, but is probably now over 800,000, and by some is believed to reach nearly 1,000,000; but this estimate is undoubtedly exaggerated, as the number of houses does not reach 90,000. Of the inhabitants more than one half are Mussulmans, the remainder an odd conglomerate of Greeks (150,000), Armenians (230,000), Levantines, Franks (20,000), and Jews (30,000), interspersed with Circassians, Persians, Arabians, Hindoos, &c. The location of Constantinople is equally favorable in a commercial and in a political point of view. Its harbor, which is capable of containing 1,200 ships, is thronged by vessels of all nations, and its commanding position at the junction of the Mediterranean and Black seas would, in the opinion of many, render it, if in the possession of a strong and energetic power, the key of the political supremacy in Europe and Asia.—The picturesque aspect of the city from the seaside is praised as vieing with that of Naples, or the bay of New York; but the favorable impression made by the beautiful hilly shores, beset with villas and gardens, is very apt to vanish at the first glimpse which the stranger obtains of the interior of the city. The streets are narrow, crooked, and exceedingly dirty, the houses dilapidated, the atmosphere filled with offensive odors. The old city proper is 11¼ miles in circumference, and is enclosed on the land side by a triple wall and moat, which, although unimportant as defensive works according to the requirements of modern military science, might, in an emergency, offer considerable resistance to an enemy. The wall has 37 gates. The streets, the irregularity of which defies all attempts of the stranger to find his way, have generally no names, nor are the houses numbered; they are badly paved, not lighted at night, and in addition to their general cheerlessness they are the resort of thousands of ownerless dogs. The houses are for the most part built of wood, and hence destructive conflagrations are of frequent occurrence. During one night in 1852, 7 fires destroyed an aggregate of 3,500 houses. The city is divided into separate districts allotted to the Turks, Greeks, Armenians, and Jews. The Turkish districts are the most extensive, and generally have a still more dilapidated appearance than the others. The bewildering labyrinth of streets, lanes, and alleys is almost unrelieved by public squares, of which there are only 7, viz.: At Midan (horse square), a portion of the old hippodrome, 450 paces in length, 100 paces broad; Serai Midan (palace square); Seriasker Midan, a portion of the old Forum Tauri, 350 paces long, 200 paces broad; Tavook Bazaar (poultry market); Djindi Midan; Et Midan, where the public executions take place; and Vafa Midan. A feature peculiar to Constantinople is the market halls, large fire-proof buildings lighted from above, in which hundreds of tradesmen and shopkeepers retail their wares, and some of which enclose several covered streets. The largest halls of this kind are the Basestan and the Misatcharshy. Open markets for the sale of horses and cattle, fish, &c., are kept daily in several streets or squares; also a market for old clothes, bluntly but perhaps not inappropriately called the Bit Bazaar, or lice market. The Avret Bazaar (women's market) is, or was formerly, set apart for the sale of female slaves. Of castles there remains only one, the castle of the 7 towers (Yadikule), originally built as a citadel, but afterward used as a state prison for princes, and the ambassadors of nations at war with Turkey. The sultan's residence of state is the Serai Humagim (seraglio), a small walled city of itself, 1¾ miles in circumference, and including mosques, dwelling houses, baths, gardens, governmental offices, the mint, arsenal, and treasury building. Formerly it was inhabited by at least 6,000 persons, and entirely inaccessible to strangers. The mystery which surrounded it gave rise to the most fabulous accounts of the splendor and magnificence of this imperial residence, all of which have vanished since it has been thrown open to visitors, who could not fail to see that the sultan's palace stands far below the residences of other European monarchs in sumptuousness, and even below many private residences in Europe or America in comfort and commodiousness. The outer gate of the seraglio is called the Sublime Porte, a designation frequently applied to the Turkish government. The old seraglio (Eski Serai), erected by Mohammed II. in the centre of the city, is about 3,500 feet in circumference, and encloses the office of the secretary of war, 2 barracks, the military academy, &c. Of other governmental buildings, only the university deserves a passing notice. Its erection was commenced in 1847; in 1855 it was used by the French army as a hospital. The number of prayer houses or mosques (a corrupted form of the Turkish word *mesjid*) in Constantinople is very large. There are 485 larger ones (*jamih*), 100 of them in the old city proper, and the number of lesser ones (mesjid) is given at 5,000; but this is probably an exaggeration. Unrivalled in gorgeousness is the great Agia Sofia, formerly the church of St. Sophia, originally founded by Constantine, A. D. 325, rebuilt by the emperor Justinian in 538, transformed into a mosque by Mohammed II., 1453, and renovated by the architect Fossati, 1847. The edifice is built of light bricks, but throughout lined with colored marble; its ground plan has the form of a cross, 269 feet in length, 143 in width; the diameter of the dome measures 115 feet; the height from the ground to the cupola is 180 feet. The ceiling and the arches between the columns are inlaid with beautiful mosaic work and gilt; the gallery, 50 feet broad, is sustained by 67 columns, some of which are of green jasper, and are said to have been taken from the celebrated temple of Diana at Ephesus; 9 massive bronze portals are covered with the most artistic alto-rilievo work. Other remarkable mosques are Kutchuk Agia Sofia, built by Justinian; Kilisse Jamih, the resting place of several Byzantine emperors; Exi Marmara Jamih (mosque of the 6 marble columns), said to have been a temple of Jupiter; the mosque of Mohammed II., with which are connected 8 *medresses* (colleges), a hospital, an eating house for the poor, &c.; the mosque of Sultan Ahmed, the only one that has 6 steeples (minarets); the Sulimanije, built by Solyman the Magnificent, 1550; the Shah Sadah Jamih, and the mosque Nuri Osmani, in the vestibule of which stands a sarcophagus of porphyry, said to have enclosed the mortal remains of Constantine the Great. The Greeks have 21 churches in the old city; the prayer houses of the other denominations are small and unimposing. The corner stone of the English memorial church was laid by Sir Stratford de Redcliffe, Oct. 19, 1858. The number of Mohammedan and Greek convents is considerable. No one of the numerous religious orders of the Mohammedans (Meslavee, Nakshebendee, Rufayler, Begtashee, Saadee, Umin Sinanee, Chalvatee, Jelvatee, Kahdree, Gulshanee, Rushanee, Bostahmee, Bairamee, Kalenderee, &c.) is without one or more convents. Among the charitable institutions the 101 imarets or soup houses, in which daily about 30,000 persons are fed, stand prominent. There are 300 hospitals in Constantinople, and in some of them at least Christians are provided for. Of lunatic asylums Constantinople has 9; of public baths, over 2,000; of khans (large enclosures, including warehouses and hotels), 40. Two aqueducts, 9 or 10 miles in length, built by the emperors Hadrian and Constantine, furnish the city with water. The *cisterna basilica*, constructed under Justinian, 336 feet long, 182 feet broad, the basis resting upon 336 marble columns, is still used as a reservoir.—The number of primary schools (*mekteb*) in Constantinople, in which only reading and the prayers are taught, is said to be over 400; the former secondary schools have been abolished, and replaced by adult schools for instruction in Arabic, rhetoric, mathematics, and history. There are also several special preparatory schools for civil service, as the college of "the sultan's mother," inaugurated in 1850, and others. Popular education is still at a very low point, despite the reforms that have been introduced by the present sultan. The military academies are as yet the only educational establishments in which a systematic course of studies, according to the modern standard of science, is pursued. Beside these, there are a medical and a veterinary college, and a naval academy; a university has been established by the present sultan, also a museum of antiquities. There are 40 public libraries, mostly connected with mosques, and some of them supposed to contain a great number of valuable old manuscripts.—Among the suburbs of Constantinople, only 5 are frequently mentioned, viz.: Pera, Galata, Tophana, Kassim Pasha, and Scutari. Pera (Turkish, Beyjolu, or Prince street) has within a few years lost its oriental character almost entirely. The ambassadors of the Christian powers reside there. The streets are still narrow and any thing but regular, but the uncouth Turkish frame houses are gradually disappearing, and substantial as well as elegant brick buildings arise in their place. There are churches for all the principal Christian denominations, a theatre in which Italian opera is performed 4 times a week, 4 hospitals (English, French, Sardinian, and German), 3 post offices (Austrian, French, and Greek), French, German, Greek, and Armenian schools (a new Austrian school was proposed to be established in 1858), several hotels, coffee gardens, clubs, circulating libraries, shops and stores, and printing offices. Gas was introduced in 1858, and the telegraphic communication with London completed in the same year, carrying news in 24 hours. The native inhabitants of Pera style themselves Perotes.—Galata, built by the Genoese, is still enclosed by the old Genoese wall and moat, about 8,000 feet in circumference. In the centre of the town stands an old round tower, originally intended as a work of defence, but now only used as a watch tower. It is 140 feet in height, and from its top the finest view of Constantinople and its vicinity can be obtained. Galata is the principal commercial suburb of Constantinople. Its narrow lanes are incessantly thronged by a busy crowd of merchants, clerks, carriers, seamen, &c. A merchants' exchange, the custom house office, an Austrian and an English marine hospital, are among the prominent buildings of Galata.—Tophana derives its importance from the large government founderies established there. The cannon made at Tophana are equal to the best of European manufacture. The red and gilt Turkish clay pipes are also manufactured there on an extensive scale.—Kassim Pasha contains the great arsenal and navy yard.—Scutari, situated on the opposite Asiatic coast (the Chrysopolis of the ancients), about 1 mile square in extent, is the principal commercial emporium of the Levant trade. A large business in silk and cotton goods, leather, &c., is carried on there. It contains a great number of khans and warehouses, also a Turkish post office, an imperial palace, and the barracks of the imperial guards.—Constantinople is the seat of important banking and commercial establishments, and is the great centre of Levantine commerce, over 28,000 vessels, with a tonnage exceeding 5,500,000, having arrived and left in 1856. The local industry, however, is unimportant. The principal articles of manufacture are leather ware, carpets, embroideries in gold, silver, and wool, arms, perfumes, and smoking apparatus of all kinds. The press of Constantinople is represented by the French *Moniteur Ottoman*, founded in 1831, which is also published in Turkish and Armenian; the *Djeridei Havadis* (the "Chronicle of News"); the *Journal de Constantinople*, which has the widest foreign circulation; the *Courrier de Constantinople*, *Commerce de Constantinople*, *Gazette Médicale*, and *Presse d'Orient*, founded in 1854; and 4 Italian journals, 1 Greek, 1 Armenian, and 1 Illyrian.

CONSTANTINOPLE, Councils of. I. The 2d general council of the church, A. D. 381, convened by the emperor Theodosius at the instance of Pope St. Damasus, who wrote letters to him before the council, and at its conclusion held a council at Rome and approved its acts. There were present 150 eastern bishops, including Meletius of Antioch, Gregory of Nyssa, Cyril of Jerusalem, and many other celebrated men. Thirty prelates, followers of the Macedonian heresy, came also to the council. The fathers began their labors by investigating the ordination of Maximus Cynicus, who had caused himself to be elected bishop of Constantinople. He was declared not to have been consecrated, and St. Gregory Nazianzen was solemnly installed in that important see. Seven canons were agreed upon. The 1st solemnly accepts the decrees of the 1st general council of Nice; the 2d confines bishops to the administration of the affairs of their own province or diocese; the 6th forbids hasty and ill-founded appeals to the emperor against the bishops, and excludes the accusations of deposed clerks, schismatics, heretics, and excommunicated persons; the 7th prescribes regulations for readmitting heretics to the communion of the church. II. The 5th general council, A. D. 553, was assembled to examine the 3 chapters, *i. e.*, the writings of Theodore of Mopsuestia, the anathematisms of Theodoret against those of St. Cyril, and the letter of Ibas to Maris the Persian. Pope Vigilius had condemned the chapters in a document called his *judicatum*, which failing to adjust matters, Vigilius and the emperor Justinian called the council together. It held 8 sessions, and condemned the 3 chapters, as containing the heresies of Arius, Nestorius, and others, whom the council anathematizes, accepting and reaffirming the doctrines of the 4 great general councils of Nice, Constantinople, Ephesus, and Chalcedon. III. The 6th general council, A. D. 680, met Nov. 7, under Pope Agatho and the emperor Constantine Pogonatus. The object of this council was to put an end to the discussions caused by the Monothelites, or those who taught that there was but one will in Jesus Christ. The council reaffirmed the teachings of the 5 general councils, decreed that in Christ there is a divine will and a human will, and respectively a double and distinct operation, the human will being, however, subject to the divine; deposed and excommunicated Macarius of Antioch, the leader of the Monothelite party; and closed its labors after 18 sessions, Aug. 16, 681. IV. The 8th general council, 869, met in the church of St. Sophia under the emperor Basil the Macedonian, the papal legates presiding. It investigated the claims of Photius, who had deposed St. Ignatius, patriarch of Constantinople, and usurped his see. Photius was anathematized as a heretic, and deposed. Those of his followers who subscribed to the profession of faith proposed by the council were allowed to retain their ecclesiastical position; the recusants were deposed and excommunicated. The doctrines of the 7 preceding councils were reaffirmed, and the teachings and practices of the Iconoclasts or image-breakers condemned. Twelve sessions were held, and 27 canons approved, bearing chiefly on the affairs of Photius, and on the election of patriarchs and bishops.—Many particular councils were held at Constantinople, but they are omitted here as uninteresting to the general reader.

CONSTANTIOS, ex-patriarch of Constantinople, born there in 1770. He was educated in the national school of the Greeks, in his native city, received orders at Jassy in Moldavia, and in 1790 went to Kiev, where for 7 years he pursued studies in theology and literature at the university. In 1798 he visited Egypt and Mount Sinai, the ancient archbishopric of which was confided to him in 1805. In 18[illegible] he was unanimously elected to the patriarchal see of Constantinople. He attempted to introduce reforms into the church and state, which brought upon him an accusation, the falseness of which was soon proved, although he had meantime resigned the office. He has since lived in retirement at Chalki, one of the Prince's islands, in the sea of Marmora, and is highly esteemed by the Christians of the Orient for his learning and his virtues. He has published a "Description of Alexandria" (Moscow, 18[illegible]), an excellent "Description of Constantinople" (1834), and a "Historical and Descriptive Essay on Egypt."

CONSTANTIUS. I. Chlorus (the Pale), emperor of Rome (A. D. 305–'6), was a relative of Claudius II., and served with distinction under Aurelian, Probus, and Diocletian. At the first division of the empire under Diocletian and Maximian, he was chosen Cæsar by the latter, while Galerius was appointed as such by the former. His provinces were Britain, Gaul, and Spain, with Augusta Trevirorum (Treves) as capital. He fought with success against the Franks on the lower Rhine, defeated the usurper Allectus in Britain, and routed the Alemanni near the upper Rhine. In 304 the Augusti and Cæsars met and triumphed at Rome. After the abdication of the 2 elder emperors in 305, the Cæsars succeeded to their dignity. Constantius continued his reign over the western provinces, ruling with humanity and protecting the Christians. On an expedition against the people of Scotland he died at Eboracum (York). His son, Constantine the Great, who accompanied him, became his successor. II. Emperor of Rome (A. D. 337–361), son of Constantine the Great and Fausta, reigned first in the East, and waged a protracted war against the Persians, which prevented him from participating in the struggle of his brothers Constantine II. and Constans in the West. After the fall of both he marched in 350 against Magnentius and Vetranio, who had usurped the purple. Vetranio submitted; Magnentius was finally crushed and committed suicide. Constantius now reigned over the whole empire. In 354, having returned to the East, he put to death his cousin Gallus, whom he had left there at the head of the army. He chose his brother Julian as Cæsar, and sent him to Gaul, where he successfully fought against the Alemanni and Franks. In 360 Julian was proclaimed emperor by the army at Paris. Constantius marched against him, but died on the way in Cilicia. Julian was his successor.

CONSTELLATION, in astronomy, a group of [illegible] to which a fixed boundary and name [illegible] given. Most of the constellations [illegible] me names that were given to them [illegible] ages of the world. Although the [illegible] t always the best, and the names [illegible] anciful, astronomers prefer to retain [illegible] own names rather than attempt the pious [illegible] of the venerable Bede, who named the [illegible] er the 12 apostles; or of Schillerius, who [illegible] Scripture names to all the constellations; [illegible] Weigelius, who introduced the coats of [illegible] of European princes into the sky. Ptole[illegible] the Almagest, enumerates 48 constella[illegible] ly: Aries, Taurus, Gemini, Cancer, [illegible] Vi[illegible] Libra, Scorpio, Sagittarius, Capri[illegible] isces, the Great Bear, the Little Bear, [illegible] the Dragon, Cepheus, Cassiopeia, An[illegible] da. Pegasus, Equulus, the Triangle, the [illegible] Boötes, the Northern Crown, Ophiu[illegible] Serpent, Hercules, the Arrow, the [illegible] Swan, the Dolphin, the Eagle, Orion, [illegible] ale, the Hare, the Great Dog, the Little [illegible] Hydra, the Cup, the Crow, the Centaur, [illegible] olf, the Altar, the Southern Fish, the Argo, the Southern Crown, the Hair of [illegible] nice, and the Boy Antinous. All the other [illegible] or 30 are comparatively modern. The only [illegible] of [illegible] ations since the extinction of [illegible] name the stars. The brightest [illegible] tion is called Alpha, the next Beta, [illegible] through the Greek alphabet. Then the [illegible] alphabet is taken up, and if the number [illegible] exceeds both alphabets, Arabic figures [illegible] resorted to. The most easily accessible in[illegible] tion on the subject will be found in Bur[illegible] "Geography of the Heavens."

CONSTITUENT ASSEMBLY, or NATIONAL ASSEMBLY (Fr. *assemblée constituante, assemblée nationale*), a political body whose office is to prepare a constitution for France. Two such [illegible] blies are particularly known under this [illegible] The 1st, opened at Versailles, May 5, 1789, [illegible] states-general, consisting of 291 deputies [illegible] the clergy, 270 of the nobles, and 558 of the [illegible] *état*, or middle class, was formed on the [illegible] l of the nobles and clergy to sit with the [illegible] entatives of the *tiers état*. The latter then, [illegible] une 17, took the name of *assemblée nationale*, and began their deliberations. Louis XIV. caused their hall to be shut against them; but they assembled in a tennis court, resolved to continue united, and called upon the nobility and clergy to join them. Of the nobles 47, including the duke of Orleans, yielded to the invitation; and then, on the command of the king, the others followed, and the clergy with them. The sessions were continued till Sept. 30, 1791. Among the leading members of the body were Mirabeau, Barnave, Cazalès, Dupont, Lafayette, Lameth, &c. The principal measures of the assembly were: Abolition of all feudal privileges, Aug. 4, 1789; the declaration of rights, Aug. 20; freedom of religion and of the press, Aug. 23 and 24; property of the clergy declared to belong to the nation and put at the disposition of the treasury, Nov. 2; creation of assignats, Dec. 19; division of the kingdom into 83 departments, Jan. 15, 1790; suppression of titles of nobility, June 19; the right of pardon withdrawn from the king, June 5, 1791; the king suspended from his functions until the completion of the constitution, July 15; abolition of orders of chivalry, July 30; constitution finished, Sept. 3; accepted by the king, Sept. 13. The 2d constituent assembly, consisting of 900 members from France and the colonies, elected by universal suffrage, after the proclamation of the republic, Feb. 24, 1848, met in Paris, May 4, 1848; was attacked, May 15, by an insurrection led by Louis Auguste Blanqui, but was successfully defended by a battalion of the national guard; on June 23, appointed Cavaignac dictator to put down the revolt growing out of the dissolution of the national workshops; adopted the constitution, Nov. 4; ordered the election of president for Dec. 10, 1848, which resulted in the choice of Louis Napoleon; and held its last meeting, May 24, 1849. Each of these assemblies was succeeded by an *assemblée législative*. Constituent assemblies have also been held in some of the Spanish American republics.

CONSTRUCTION, in mathematics, is the drawing of a geometrical figure to illustrate a law of number, or of other quantities not geometrical. As the eye is the most perfect of our senses, the law when made visible by construction is more readily understood and its consequences more readily discovered. For very beautiful and valuable applications of the method of geometrical construction, see the reports of U. S. coast survey, and the papers presented by its officers to the American association for the advancement of science.

CONSUL (Lat. *consulere*, to take care for), in Roman antiquity, the title of 2 supreme civil and military officers, by whom the republic was governed after the expulsion of the kings in 510 B. C. The office existed during 1,050 years, and assumed distinct phases in the republic, and in the Latin and Byzantine empires. The consuls were at first elected annually from the patricians, had all the insignia of royalty except the crown, and were preceded by lictors bearing the symbolic *fasces*. The only examples of but a single consul for part of a year were in 68 and 52 B. C. The plebeians, claiming a right to elect one of the consuls from their own estate, obtained as a compromise in 444 B. C. the election of one of the military tribunes who were invested with consular power. In 366 the Licinian law opened one of the consular offices to them, and in 172 both of the consuls were for the first time plebeians. The consuls command-

But in no other treaty has this power been provided for, and the exercise of it must therefore rest upon mere commercial usage, and perhaps does not extend beyond what the parties may voluntarily submit to. The duties of consuls of the United States are defined in several acts of congress, embracing what has been above specified (except the judicial power). A consul is not, by the law of nations, entitled to the privileges of a public minister, and is subject to the laws of the country where he resides, in like manner as any private person from the same country to which such consul belongs would be. In Mohammedan countries, consuls enjoy the same immunities that are conceded to foreign ministers at Constantinople.

CONSUMPTION (*phthisis tuberculosa*, *phthisis pulmonalis*). Formerly, when little was known of the pathology of disease, and when the means of discriminating between different complaints were imperfect and inaccurate, a number of chronic maladies attended with wasting of the body were grouped together under the term consumption, and we had consumption of the lungs, of the bowels, of the liver, nervous consumption, &c.; but as our knowledge of morbid processes has advanced, the term has become restricted, and now it is limited to the disease attendant on the development of a peculiar foreign matter, tubercle, in the lungs, and the changes which this matter itself undergoes, and causes in the tissues by which it is surrounded. The disease is wide-spread, occurring in all countries and in every climate; it is exceedingly fatal, causing a larger mortality than any other malady; it has been calculated that from ¼ to ⅙ of the deaths in all large towns are due directly or indirectly to consumption; and deducting the mortality of infancy, Sir James Clark estimates that ⅕ of all the deaths in England are caused by tuberculous diseases. In England and Wales in the year 1855, in a population of 18,786,914, the total number of deaths amounted to 425,703; of this number, 52,289, nearly 1 in 8, died of consumption. Though most frequent between 20 and 40, it is confined to no period of life, occurring at all ages, from infancy to old age. Guernsent, one of the physicians to the *hôpital des enfans malades*, an institution at Paris devoted to the treatment of patients between 1 and 10 years of age, states that ⅗ of those who die in that establishment are more or less tuberculous, and instances are not very infrequent in which phthisis is met with in patients over 70 years of age. Females have been deemed more liable to consumption than males; yet in the consumption hospital at Brompton, near London, out of 1,000 cases of consumption 582 or 58.2 were males, and 418 or 41.8 per cent. were females.—*Causes.* Of the causes which produce pulmonary consumption, hereditary predisposition is undoubtedly the most powerful. Out of 1,000 consumptives in the Brompton hospital, hereditary predisposition could be distinctly traced in 367 cases. ("On Consumption," &c., by Richard Payne Cotton, M.D., London, 1858.) But this represents only a part of the case; some of the parents were undoubtedly cut off by intercurrent disease, though truly tuberculous; in other instances the disease may have passed over one or two generations, showing itself only in the grandchildren or great-grandchildren of consumptive ancestors. There would seem perhaps a greater tendency for the disease to be transmitted on the part of the father to male and of the mother to female children; thus, in the 367 cases of herditary transmission above quoted, the father alone was consumptive in 112 instances, and in these the proportion of the sexes was 59 males to 53 females, while in the 110 instances in which the mother alone was consumptive 40 were males and 62 females. Independent of hereditary transmission, it is in the highest degree probable that many constitutional diseases and conditions in the parents, by rendering the progeny feeble and deficient in stamina, render them at the same time liable to the attacks of phthisis. The offspring of parents advanced in life, of those suffering from secondary syphilis, dyspepsia, gout, &c., suffer in undue proportion from pulmonary phthisis. It has long been notorious that, among the lower animals, confinement in an imperfectly ventilated atmosphere is apt rapidly to render them tuberculous; among mankind, those whose occupations confine them in the house and the workshop suffer in greatly larger proportion from phthisis than those whose employments lead them into the open air. M. Lombard states that in Paris, Geneva, Vienna, and Hamburg, consumption occurs in those leading a sedentary life, in comparison with those leading an active one, in the proportion of 141 to 89. Where there is any tendency to phthisis, an unwholesome or insufficient diet, as indeed all the means by which the vital powers are directly or indirectly lessened, tends greatly to its development. Among the moral causes, none act with so much energy as grief or anxiety of mind.—*Progress.* The progress of consumption is ordinarily slow. The average duration of the cases recorded by Bayle and Louis, amounting in all to 314, was 23 months; but of these 162, or more than half, terminated within 9 months, 2 only terminated within a month, while 11 lingered on from 10 to 20 years. In the large majority of instances the disease is essentially chronic, while the small number of cases which run their course in 1 or 2 months, differing from the more ordinary form in their symptoms as well as their duration, are spoken of as acute phthisis. The approach of the disease is commonly gradual. For some time the patient is observed to be out of health; he has a slight, dry cough, particularly in the morning, or after meals or exercise, of which he takes little notice, and which he is apt to refer to his throat. He is more easily fatigued than usual, becomes a little thinner and paler, and suffers from breathlessness in mounting a staircase or climbing a height. Often after these symptoms have been present for a time, occasionally without their having been noticed, hemorrhage from the lungs occurs. The patient suddenly spits up a quantity of bright, frothy blood, varying in amount from a few streaks to a pint or more; this immediately awakens attention, and often the disease, which has already been present for some time, is dated from its occurrence. The cough, at first trifling and dry, becomes more troublesome, and is attended with the expectoration of a frothy fluid, apparently saliva mixed with a little mucus. The patient is often sensible of slight feverishness in the after part of the day or after meals; there is some flushing of the face, increased heat of the palms of the hands and the soles of the feet, a slight hurry of the breathing, and a greater tendency to cough; these symptoms may be followed by some moisture of the skin, or a tendency to night sweats may alone be present. Pain at this period is rarely complained of, and yet the patient, if questioned, will generally be found to have suffered occasionally from pain more or less acute about the shoulders, under the shoulder blades, or in the sides. The appetite varies; in a few cases it remains good until late in the disease, but in the great majority it is impaired, and the patient suffers more or less from dyspepsia. Such are the symptoms which mark the first stage of pulmonary phthisis, during which the tubercles are still crude or unsoftened, but they are subject to great variation. Sometimes from the commencement the cough is frequent, troublesome, occurring in paroxysms; at others it is so slight as scarcely to awaken attention, or in some few cases it seems to be wholly absent. In the same way the pulse, which in the majority of cases becomes increased in frequency, in some, particularly in individuals whose circulation is naturally languid, remains unaffected to a late period of the disease. Hemoptysis occurred in about ⅔ of Louis' cases; in 1,000 cases observed at the Brompton hospital, it occurred, according to Cotton, in 53.6 per cent.; but here Dr. Cotton must have counted only the cases in which hemorrhage to a notable amount took place. Dr. Walshe, reckoning the cases in which streaks of blood were seen in the sputa, found that it took place in 81 per cent. of his cases.—The softening of the tubercular matter, and its elimination from the lungs, constitute the second stage of phthisis. As this comes on, the cough becomes more frequent and troublesome; after meals it often occasions vomiting, and at night it prevents sleep. The expectoration becomes easier and more copious; the colorless mucus of the first stage gradually becomes less aërated; specks of a yellow or ash color are discovered in it, and these run together and assume a striated appearance. As the opaque matter increases, the sputa are observed to form distinct, rounded masses, which, when expectorated into water, have a flocculent appearance, and either sink to the bottom of the vessel or float at various depths from the surface. Toward the close the expectoration often becomes ash-colored, and the sputa run together, forming a uniform mass consisting almost wholly of pure pus. While the tubercular matter is undergoing softening and elimination, the pulse increases in frequency and hectic fever becomes more and more decided; the paroxysms generally occur toward evening, and consist of a chill more or less marked, followed by fever, and terminated by copious perspiration. Sometimes there are 2 distinct paroxysms in the day. The patient is harassed by night sweats; he cannot fall asleep without becoming bathed in perspiration. He now rapidly loses flesh; from the emaciation, the eyes appear larger, and they have a peculiar glassy look; the features become sharp; the complexion, when the fever is absent, is pallid and bloodless; the breathing is hurried by the least exertion or excitement; he often suffers a good deal from sharp pains about the sides or shoulders, and the strength fails to such a degree that the slightest exertion becomes painful or impossible. With the progress of the disease diarrhœa, which was at first transient and easily controlled, becomes more troublesome and less amenable to remedies, returning soon when checked with renewed violence. Toward the close the lower extremities often become edematous, and sometimes a short time before death an apthous ulceration of the mouth adds to the patient's sufferings. There are some minor phenomena which occur in phthisis, the causes of which are not known, but which are so constantly present that they seem essentially connected with the disease. The finger nails are apt to become incurvated; the base of the nail appears raised, while the incurvation is often so great as to approach a semi-circle; the ends of the fingers at the same time seem to grow broader, so that they assume a clubbed appearance. M. Fredericq first drew attention to the presence in phthisis of a brick-colored line about the free edge of the gums; it is best marked about the incisor teeth, and is absent when the teeth have been lost. This phenomenon is undoubtedly present in a large majority of the cases of phthisis, and is very rarely present in other diseases.—During the progress of chronic phthisis, the patient is liable to intercurrent disorders which aggravate the original affection. No case of phthisis runs its course without being attended at some period by bronchitis. When this is severe, it renders the patient's condition materially worse, increasing the fever, hurrying the breathing, and adding greatly to the prostration. Pneumonia is not an infrequent complication, and, what is singular, is generally mild and manageable, requiring but little active treatment. Pleurisy is a very constant attendant on phthisis; commonly it is local, and is excited directly by the irritation caused by the tubercular matter; it is the most frequent cause of the sharp pains about the shoulders and sides under which the patient suffers, and is accompanied by the exudation of lymph by which the pleural surfaces are thickened and agglutinated.

When pleurisy with effusion occurs, it is a formidable complication, materially aggravating the condition of the patient, and seldom admitting of perfect cure. In rare cases pneumo-thorax is caused by the rupture of the pleura from the softening of a tubercle in its immediate neighborhood, or by the bursting of a vomica into its cavity. It may generally be recognized by the sudden occurrence of pain, attended by great difficulty of breathing, a sunken, anxious countenance, and frequent pulse; pleurisy is immediately lighted up, effusion takes place, and the case becomes one of hydro-pneumo-thorax. If the accident has taken place on the side comparatively sound while the other lung is much affected, the patient rarely survives long. When the converse is the case, existence may be protracted for many months.—With the symptoms of chronic phthisis, at the same time causing and accompanying them, tubercular deposition is taking place in the lungs. In the vast majority of instances this occurs first in the summit of these organs, and one lung is apt to be affected earlier and to a greater extent than the other. In the earliest stage the tubercular matter presents itself in one of two forms: 1, as small, rounded, semi-transparent granulations, of a grayish color, varying in size from a millet seed to a pea, disseminated throughout the affected portion of the lungs; in the progress of the disease a yellow spot is formed in the centre of the grayish matter, and this gradually increases until the whole becomes of a uniform color; 2, the grayish matter is infiltrated into the substance of the lungs in irregular masses; the yellowish points make their appearance in these masses, increase and coalesce, until the whole forms irregularly rounded bodies, varying in size from a pea to a hen's egg, more or less soft and friable, breaking down like cheese under the pressure of the fingers. After a time these yellow bodies undergo a new transformation; they begin to soften in the centre, and gradually become converted into a thick, yellowish fluid or semi-fluid matter. The abscesses containing this matter are termed vomicæ; by degrees their contents find their way into the bronchial tubes, and are expectorated, leaving ragged, irregular cavities in the lungs. These cavities when first formed are rounded, rarely entirely emptied, and are commonly lined by a delicate false membrane; old cavities are irregular in their form, presenting anfractuosities, and are commonly lined with a dense false membrane, while their walls and the neighboring pulmonary tissue are infiltrated with tubercle. The mucous membrane lining the bronchial tubes which are connected with old cavities, is almost invariably inflamed and thickened. In a certain number of cases the trachea presents ulcerations varying in size and number; the larynx is more rarely affected, and here the ulcerations are mostly confined to the vocal chords and the epiglottis. The small intestines often present numerous ulcers, which become more frequent as we approach the cæcum, and are intermixed with gray granulations and tubercles in various stages of progress. The large intestines are often likewise ulcerated, and the mesenteric glands are infiltrated with tubercular matter. The liver sometimes undergoes a peculiar alteration in consumption; it becomes greatly enlarged and of a pale fawn color, and when cut, it communicates to the knife, or to bibulous paper held on the cut surface, a greasy stain. It has undergone what has been termed fatty degeneration.—*Physical signs.* While the symptoms of pulmonary phthisis in well-marked cases are so characteristic as to leave little doubt of the nature of the disease, they often become so only at an advanced period; the physical signs, on the other hand, are often earlier present, are more constant in their character, and in connection with the symptoms are perfectly diagnostic. When even a slight amount of tubercular deposition is present, careful percussion at the inner end of the clavicle, or beneath or above that bone, or behind in the supra-spinous fossa, will frequently detect a comparative dulness, greater or less in degree according to the amount of the deposit. At the same time, or even earlier, in the same region and in that alone, the respiratory sounds on auscultation will be more or less modified; the respiratory murmur is weaker or harsher, the expiratory prolonged and louder. On the right side, this sign by itself has little value; on the left, it is highly significant. Sometimes the respiratory murmur is interrupted, or, as it has been termed, jerking; the murmur, instead of being smooth and continuous, is broken into two or more distinct periods. A little later, a few short, dry, crackling sounds are heard with each inspiration; when once well established, this characteristic remains permanent, until it passes into the moist sounds denoting incipient softening. As the amount of tubercular deposit increases, the dulness on percussion becomes more marked, and the harsh respiration assumes more or less of the bronchial character; the vocal resonance becomes louder, and when the consolidation is considerable and superficial, perfect pectoriloquy may be present. The vocal vibration, too, becomes more marked, and indeed in males is more constant in its character than the vocal resonance. The softening of tubercles is indicated by the occurrence of moist sounds; at first often a single click is heard at one point at the summit of the chest, but it persists day after day, or it gradually extends, and is converted into a coarse crepitus or mucous rattle; at the same time the respiration becomes more and more tubular in its character. As a cavity is gradually formed, pectoriloquy, heard best when the patient whispers, commonly makes its appearance. With the progress of the complaint a notable change takes place in the form of the upper part of the thorax. When there is a large deposit of crude tubercle, the movements of the chest are seen to be limited; the upper ribs do not move in respiration, or during forced inspiration are dragged directly upward instead of upward and outward, as in health. When tubercles have softened and been eliminated, a depression will be noticed generally beneath the clavicles; the whole circumference indeed of the upper part of the chest, or of one side of it, when the disease is mainly confined to one side, will be found to be lessened, both the antero-posterior and the transverse diameter being notably diminished. When a cavity communicates freely with a bronchial tube, percussion under favorable circumstances gives rise to cracked-pot sound. A large superficial cavity with tense walls may give rise to tympanitic sound on percussion, and on auscultation to cavernous or amphoric respiration; in such cases metallic tinkling may likewise be heard, and if the cavity be moderately full, succussion may produce a gurgling sound. Such are the usual physical signs of pulmonary phthisis, though occasionally others are noted which under some circumstances may be useful. When in a suspicious case careful examination can discover nothing but an increased roughness of the respiratory, and a prolongation of the expiratory murmur under the right clavicle, the diagnosis becomes much clearer if the heart sounds are heard more distinctly in that situation than under the left clavicle. A murmur of the subclavian artery, heard most distinctly on full inspiration, in itself a sign of doubtful value, adds strength to other suspicious symptoms. Under similar circumstances the signs of dry pleurisy or of bronchitis, or of pneumonia confined to one apex, have a certain and positive value.—*Diagnosis.* The diagnosis of phthisis is in general not attended with much difficulty. A short, dry cough, coming on without obvious cause, accompanied by hurried breathing on exertion, and by progressive emaciation, makes the presence of consumption exceedingly probable. If on physical examination slight dulness is found at the summit of either lung, together with any decided alteration of the respiratory murmur, both signs being limited to the summit, the diagnosis is almost certain. It must be borne in mind, however, that slight alteration of the respiratory murmur beneath the right clavicle, owing to natural differences between the 2 sides, is, alone, of little value. The occurrence of hemoptysis to the extent of a teaspoonful, when there is neither disease of the heart, nor cancer, nor gangrene of the lung, and when it cannot be attributed to mechanical injury or to vicarious menstruation, renders the presence of tubercle infinitely probable; and if cough and emaciation are at the same time present, it may be looked upon as certain. The presence of persistent or habitually recurring diarrhœa, in one who has not been a resident of a tropical or semi-tropical climate, is looked upon by Dr. Walshe as almost certainly indicative of phthisis; and even steady and progressive loss of weight, without obvious cause, though unattended by other symptoms, is generally due to tubercular disease. It must be recollected that phthisis is occasionally latent, that cases occur in which during the whole progress of the complaint there is neither cough, nor expectoration, nor pain, nor marked breathlessness, to call attention to the lungs, and yet physical examination shows those organs to be the sole source of mischief.—*Prognosis.* The fatal character of phthisis is well known; once fairly established, however chronic may be its course, however often intervals of improved health may raise the hopes of the patient and his friends, it rarely loosens its hold until death closes the scene; yet it is certain that the disease is sometimes cured, and very frequently its progress is arrested for years. A limited deposit of tubercular matter may cease to excite irritation, and after a time become converted into a chalky concretion; or a similar deposit may become softened and expectorated, and no new deposit occurring, the cavity thus formed may be gradually obliterated. Repeated *post-mortem* examinations of the bodies of men in advanced life, who have suffered from the symptoms of consumption in their youth, have shown one or both of these modes of cure. Again, in many cases the progress of phthisis is so slow, the time between the softening and discharge of one crop of tubercles and the deposit and softening of another is so protracted, that the patient may enjoy long intervals of comparative health, during which he is competent to the employments and pleasures of life. Those cases in which the appetite remains good, and the pulse does not become frequent, are generally the most hopeful. Even when softening is going on and hectic fever has set in, and emaciation is making rapid progress, provided the amount of the tubercular deposit is not considerable, we may hope for a favorable change. When, on the other hand, the appetite is completely lost, and when the pulse remains constantly frequent, or when unmanageable diarrhœa sets in, the disease is too apt to go on rapidly to a fatal termination. Cases, too, in which the disease advances slowly but continuously until a large amount of tubercular deposit takes place before softening occurs, make rapid progress when that process once commences.—*Treatment.* Tubercle is an unorganized product; when once it has been deposited, it is beyond our influence; our efforts must be directed to moderate or prevent the irritation excited by its presence, and so to modify and strengthen the system as to check its further deposition. When general bronchitis or pneumonia or pleurisy complicates the progress of phthisis, the treatment is modified by that of the special complication; it being always, however, borne in mind that phthisis is essentially a disease of debility, that in general its progress is hastened by every thing by which the powers of the system are decidedly depressed, and that the activity of our measures must be accordingly very much modified. Local bleedletting, antimony, digitalis, &c., must be employed with the greatest circumspection. Of all means of improving the general habit in the earlier stage of phthisis, change of air, travel

ost important. In certain cases loca-
ich possess particular qualities of air
ubtedly most desirable; thus relaxed
e most benefited by a dry, bracing
others again find relief in a soft,
; but as a general rule, and of course
extremes of heat and cold, that
hich will be accompanied by the great-
of pleasure and occupation, and
keep the patient most in the open
e found most beneficial; indeed, evi-
ot wanting to prove that a life passed
en air is of service, even when accom-
hardship and exposure. The diet of
t. while it should be digestible, should
us and even generous, and in most
e allowance of wine or malt
d beneficial. Medicines, when
, should be generally selected
of tonics. Iron and the vege-
are often found useful. Hydro-
dministered in doses of from 2 to
or cyanide of potassium in doses of
¼ of a grain, in some pleasant vehicle,
be useful in controlling the cough.
of opium should be avoided
, on account of their injurious ef-
t digestive organs.—No one article
es has been so generally employed
tion as cod-liver oil, and the amount
ccumulated in its favor leaves no
oubt of its utility. It would seem to
riment rather than as a medicine;
can be borne, the patient during its
improves in flesh and strength.
d-liver oil disagrees with the patient,
r form of fatty matter may be substitu-
f these cream is the most agreeable. It
able that in Iceland, where the diet of
s consists mainly of fish, and where
largely consumed, both consump-
crofulous complaints are unknown.
s from papers published by Professor
of Edinburgh, and Mr. J. B. Thomson
(Edinburgh "Medical Journal," Oct.
June, 1858), that the external use of
highly advantageous in incipient con-
, or where there is a tendency to it.
processes in the woollen manufacture,
es of the operatives become saturated
and statistical inquiries prove that
aged in the woollen manufacture suf-
less from scrofula and phthisis than
der of the population, and that this
is most marked in operatives engaged
rocesses in which oil is used. Young
uffering from scrofulous affections, on
engaged in that portion of the man-
gain weight and strength, and even
h confirmed phthisis are benefited.—
hat by inhalation such medicines as are
ay be applied directly to the diseased
has long directed attention to that
nd various substances have been em-
Hydrocyanic acid, creosote, tar, coni-
, chloroform, iodine diluted and vola-

tilised by hot water, the balsams, &c., have been recommended and employed. Occasionally they soothe cough and thus add to the comfort of the patient, but commonly they have proved of little service. More recently the hypophosphites of lime and soda have been proposed by Dr. Churchill, but the trials made of them at the Brompton hospital throw serious doubts on their value. Independent of the general means calculated to improve the strength and fortify the constitution, the treatment of consumption resolves itself into the means of combating the diseases which complicate it and the symptoms which occur in its progress. To the former we have already alluded, and will only add that mild counter-irritation is often of great service, and of the means for producing it liniments containing croton oil are among those most generally useful. The night sweats are best treated by means of astringents and the mineral acids. Dr. Cotton finds the oxide of zinc, in doses of 5 or 6 grains taken at bedtime, of great utility in checking them. Diarrhœa is often best controlled by the use of the subnitrate of bismuth, given in doses of 20 or 30 grains 3 times a day; where this fails, opium and astringents must be resorted to.—*Acute phthisis.* Cases in which the ordinary form of phthisis runs a rapid progress and speedily terminates in death are by no means uncommon; but acute phthisis is a very rare disease, and one of which the diagnosis is often difficult. Frequently recurring chills are followed by intense fever, harassing cough, and great prostration; the countenance is anxious, the respiration hurried, the complexion, from the imperfect oxygenation of the blood, frequently dusky. Emaciation is not a marked symptom, but more or less œdema is generally present. On examination after death, the lungs are found crowded with tubercle, either wholly or partially softened, or in the miliary form.

CONTAGION (Lat. *contagio*, from *con*, together, and *tango*, to touch), primarily, the propagation of disease by contact. It is scarcely distinguished in usage, even by medical writers, from infection, which designates the communication of disease by effluvia through the air. The contagious matter is the subtle, poisonous particles which diffuse themselves through the atmosphere, or attach themselves to various substances, as clothing and furniture. Concentrated in wool or fur, they retain their power of originating disease after being carried to a great distance. Among diseases propagated by immediate contagion, or direct application of the contagious matter, are ringworm, cow pox, itch, and several others; among those communicated by remote contagion, or infection, are small pox, measles, scarlet fever, mumps, and whooping cough. (See EPIDEMIC DISEASES.)

CONTARINI, a Venetian family, which counted 8 doges among its members, and over 60 persons of distinction. I. ANDREA, doge from 1367 to 1382. The Genoese, with whom there was ceaseless rivalry, under Pietro Doria conquered Chiozza in 1379, and even threatened

Venice. Andrea reconquered Chiozza, and freed the republic from its enemies. He is noted as having been perhaps the only doge who refused the dignity when first elected, but he was obliged to assume it in order to avoid being treated as a rebel. II. Ambrosio, a Venetian ambassador, wrote an interesting account of his journey and mission to Persia in 1473 (*Itinerario nell' anno 1473 ad Usun Cassan, Rè di Persia*, Venice, 1524). III. Giovanni, a painter, whose style was formed on that of Titian, born in 1549, died in 1605. He visited Germany, where he remained for some time, and was knighted by the emperor Rudolf II. His greatest work is a "Resurrection," in the church of San Francesco di Paola, in Venice. IV. Domenico II., doge from 1660 to 1674. His reign is chiefly noted for the famous siege of Candia by the Turks, and its defence by the Venetians and their allies. The struggle lasted for 5 years, but at length the Venetian commander, Francesco Morosini, was obliged to capitulate. It is estimated that 30,000 Christians and 120,000 Mohammedans died in the siege.

CONTEMPT, a disregard of the authority of a judicial tribunal or legislative body, for which the offending party is liable to punishment by summary order, without the ordinary forms of criminal proceedings, as indictment and trial by jury. A contempt may be either direct, as by refusal to obey an order of a court, or constructive, as when officers of a court are guilty of any corrupt conduct, abuse of process, or culpable neglect of duty. Instances of the former are when inferior magistrates or judges disobey writs issuing from superior courts, as by proceeding in a cause after it is stayed or removed by writ of prohibition, certiorari, supersedeas, and the like, or by refusal or neglect to obey some requisition made by writ of mandamus. So when parties to any suit or proceeding disobey any order made in such suit or proceeding. Thus, non-payment of costs which the court have adjudged to be paid, or the neglect to do any specific act, as to perform an award of arbitrators when the submission to the determination of such arbitrators has been made a rule of court, is held to be a contempt, for which process of attachment will be issued; but in these and the like cases the attachment is to be regarded as a civil remedy for the benefit of one party against another, rather than as criminal process for the vindication of the authority of the court. In the court of chancery this was formerly the only mode of enforcing obedience to its orders or decrees. But the later practice, in England and in this country, has been to issue the common process of execution upon a final decree for the payment of money, and in the state of New York this may be done in all the courts to enforce payment of costs, given by interlocutory orders in the progress of a cause. Under the head of constructive contempts may be specified: 1. Misconduct of sheriffs and other ministerial officers for oppression, extortion, or any abuse of process placed in their hands, as in the execution of such process they are considered the officers of the court from which such process issued, and therefore directly amenable to it. 2. Fraud or malpractice of attorneys, solicitors, &c. Fair dealing between them and their clients will be enforced upon summary application. Non-payment of money collected by an attorney or solicitor will subject him to process of attachment. So when any improper advantage has been taken of a client, it will be treated as a contempt, and relief granted upon motion. The ground upon which courts interfere in such cases is the confidential relation between attorney and client, and the disrepute which would attach to the courts themselves if any want of integrity should be tolerated in their officers. In other cases courts will punish attorneys and other officers for a breach of any prescribed duty, even when there has been no private injury. Thus, in the state of New York a master in chancery was held to have committed a contempt for carrying on a suit in the name of another solicitor contrary to statute. (See Yates's case, 4 Johnson's Rep. 317; 6 id. 337; 9 id. 395.) So if a private person brings a suit in the name of another person without his consent or privity, it is held to be a contempt. (2 Johnson's Rep. 291.) For any disorderly conduct in court, summary punishment may be inflicted; in other cases an attachment issues for the arrest of the offending party, and when brought in he is usually required to answer written interrogatories. If the commission of the offence is not admitted, further proof may be taken by affidavits. Upon the admission or proof of the offence, the court adjudges the party in contempt, and may prescribe punishment in its discretion, which may be either fine or imprisonment, or both. There are some cases of contempt by persons not parties to a suit, nor officers of a court, as when a publication has been made calculated to impair the dignity of the court. To what extent courts would in this country be allowed to exercise such a power is not settled. In respect to legislative bodies, the authority to punish for contempts is subject to the same general principles which are applicable to courts; yet there are instances in which it has been enforced beyond what would be warranted by any settled rule. In this country it probably would not be allowed beyond the jurisdiction which a legislative body necessarily has over its own members; also the power of protecting its members in the exercise of the privileges belonging to them as such, and the right of preserving order, which involves the power of punishing persons not members for any flagrant disturbance.

CONTINENTAL SYSTEM, the blockade of Great Britain ordered by Napoleon by the decree of Berlin, Nov. 21, 1806. The ports of France and its allied states were to be closed against all vessels coming from England or from English colonies; all commerce and correspondence prohibited; all English goods and merchandise, wherever found, seized. The retaliatory measures adopted by the English government caused Napoleon to make the blockade still more stringent, and new decrees to this effect were issued from Milan, Dec. 17, 1807; Trianon, Aug. 3; and Fontainebleau, Oct. 18, 1810. Denmark, Russia, and Austria were successively forced to join this hostile league against England; so that, with the exception of Sweden, Spain, Sicily, and Sardinia, all the ports of Europe were closed against British vessels. But with all his power, Napoleon could not make nations and rulers forget their actual interests; his own brothers were unwilling to enforce what they considered a foolish scheme; English goods were smuggled everywhere; and Great Britain, notwithstanding her commercial losses, had still resources enough to buy up the members of the league. Napoleon, however, could not bring his mind to give it up, and his declaration of war against Russia in 1812 was chiefly instigated by his indignation at seeing the ports of that empire reopened to English commerce.

CONTRABAND (law Lat. *contra* and *bannum*, contrary to an edict, proclamation, or treaty) designates goods exported from or imported into a country in violation of its laws. Contraband of war, in international law, applies to goods which neutrals are prohibited from carrying during war to either of the belligerent parties. Whatever is directly of use for war, and for that only, as arms and ammunition, would of course be contraband; but articles which may be of use either in peace or war will be subject to a varying rule according to the existing circumstances. Thus, provisions may ordinarily be carried by a neutral to a belligerent without being deemed contraband; yet, in the case of a blockade of a town with the expectation of reducing it by famine, a neutral could not lawfully furnish provisions to the besieged party, as it would be giving means of assistance against one of the legitimate operations of war. Naval stores and materials for building or furnishing vessels of war are contraband by the modern law of nations; formerly they were so regarded only in a naval war, but at the present day, naval operations being more or less incident to every war, the rule has become general that the furnishing such materials to a belligerent is unlawful. It has been a question whether, if the materials are not exclusively applicable to the building or furnishing of war vessels, they would necessarily be contraband. It has been held in the English admiralty courts that they would be; but in the French council of prizes it was decided in 1807 that ordinary ship timber, adapted to the building of merchant vessels as well as vessels of war, carried to an enemy's port, was not *per se* to be deemed contraband. In the war between England and France, which commenced near the close of the last century, it was attempted by both nations to enforce a stricter rule against neutral powers than had been claimed before that time by any nation of modern Europe. The national convention of France in 1793 decreed that neutral vessels laden with provisions, destined to an enemy's port, should be seized and carried to France, which was followed by an order of the English government to detain all neutral vessels bound for France having corn, meal, or flour on board. The ground upon which England justified this detention was, that the depriving the enemy of the supplies necessary for her population was one of the means relied upon for reducing her to accept reasonable terms of peace; and that, under this plan of operations, all provisions destined for any port of France were contraband. This claim was resisted by the government of the United States, who insisted that provisions were never contraband, except when destined to a place which was actually invested. The courts of the United States have, however, since that time admitted that provisions intended for the use of the army or navy of the enemy, or destined to his posts of military or naval equipment, should be deemed contraband; and the decisions in the English admiralty courts substantially limit the rule as to provisions being contraband to the cases above specified; so that the courts of both countries are in conformity with each other, and the claim made by the English government in 1793 seems to be abandoned, at all events is not likely ever to be reasserted, unless in a contest as desperate as that in which she was then engaged. Confiscation is the penalty upon seizure of contraband goods, except in the case of provisions, as to which the practice has been substituted of taking them at a reasonable price instead of enforcing forfeiture. It is understood that confiscation of the goods is not a just ground of complaint on the part of the neutral power, and is not the subject of reclamation. So, on the other hand, the neutral power is not chargeable with a breach of neutrality, for the reason that it allows its subjects to carry contraband goods to a belligerent. The risk of seizure and confiscation is deemed a sufficient penalty.

CONTRA COSTA, a co. of California, bounded W. by the bay of San Francisco, N. by San Pablo and Suisun bays and Sacramento river, E. by San Joaquin river; area, 900 sq. m.; pop. in 1852, 2,745. There are mountains in the southern part of the county, the most considerable of which is Mt. Diabolo, but the surface in other portions is generally level. The soil is fertile and productive. There are numerous salt and sulphur springs. Limestone is found in abundance; gypsum has been discovered; and there are quarries of red freestone and building stone of excellent quality. Barley, wheat, potatoes, cattle, and horses are the chief productions, and the harvest in 1856 amounted to 801,885 bushels of wheat, 185,900 of barley, and 10,960 of oats.. Capital, Martinez.

CONTRACT (Lat. *contraho*, to draw together). As its derivation denotes, a contract is a concurrence of the minds of two or more parties in reference to something to be done by one or both, and imports mutuality; that is to say, each of the contracting parties may undertake the performance of something for the benefit of the other, or one may promise to do a certain thing in consideration of what is done by the other at the time of the making of such promise, or has been previously done. Contracts may be either in express terms or implied from the acts of the parties; they may also be verbal or in writing, and at common law both forms are equally obligatory; but by statute in England and in the United States it is required that a promise shall be in writing, and signed by the party to be charged: 1, when it is not to be performed within one year from the making thereof; 2, when it is to answer for the debt or default of another person; 3, when it is made in consideration of marriage, except mutual promises to marry; 4, in cases of sales of goods beyond a certain amount or value (in this country usually $50), unless there was delivery of part, or payment in part; 5, when the contract is for the sale of lands or some interest in lands, or leasing for a longer period than one year. In all these cases it is also required that the consideration shall be expressed in the writing containing the contract. An instrument under seal was at common law subject to certain legal incidents, essentially differing from those belonging to other contracts. The promise in such case is called a covenant; no consideration was required to be expressed, nor in an action brought upon such an instrument could the want of a consideration be set up as a defence, the seal being deemed of such weighty import that a consideration was presumed. The doctrine of the common law in relation to sealed instruments is peculiar, indeed may be called *sui generis*. Originally the seal was used in place of the signature, many being unable to write their names. Usually the seal had something to distinguish it, so that to some extent it could be identified; coats of arms were introduced as the devices of seals during the crusades, when it was the custom to put such devices upon the shields of knights. At that time the sealing of a deed was a sufficient execution, and the form of attestation, viz., "sealed and delivered," without mentioning the signing, has continued even to the present time, notwithstanding the statute above mentioned requiring deeds to be signed (which statute was passed in the reign of Charles II.). But after the signature became necessary, and which, as we should have supposed, would have superseded the use of the seal, the old custom of sealing still continued, and, what was more singular, had the same legal consequence as a formality. There might have been some reason for this as respected those who maintained the use of their own individual devices upon their seals; but as to the great mass of the people, the supposition of each man having his private seal was an absurd fiction, and accordingly a common stamp, without any device at all, could be used for making an impression. It was required at common law that there should be an impression upon some soft substance, usually wax, which was affixed to the deed which it authenticated. The definition of a seal by Coke was: *Sigillum est cera impressa*; the wax alone without an impression would not be a seal, but it mattered not what was impressed. It became usual, especially in this country, to substitute small slips of paper for seals, which were attached by wax or wafers to the deed. While the paper was moist, an impression could be made that would be perceptible, but, as before remarked, the impression itself had nothing distinctive; hence in some of the states it has been altogether dispensed with, and a mere scroll or flourish with the pen substituted in place thereof. This would seem to be, in fact, abolishing the use of a seal as a distinct formality; yet, in all the modes of sealing, whether by wax, paper, or scroll, the legal effect has remained the same. In the state of New York it has been provided by statute that the want of consideration may be proved in avoidance of a sealed instrument (2 Rev. Stat. 406), and this has been followed in some other states; but other incidents of sealed instruments are still in force, the most important of which is, that the limitation of time for bringing an action thereon is 20 years, whereas upon a common contract, as a promissory note, the lapse of 6 years is a bar; so that if a slip of paper be wafered upon a note and called a seal, the instrument becomes a speciality, and the obligation continues in force 20 years without renewal, but without such seal is extinguished in 6 years unless a new promise is made. The essential rules in respect to contracts are: 1, that the parties must be legally competent to make a contract; 2, there must be a sufficient consideration; 3, the contract itself, or what is agreed to be done, must be lawful; 4, in determining the legal effect of some contracts, it sometimes becomes necessary to refer to the laws of other countries, as if the contract was made or to be executed abroad, and this involves the application of rules derived from the *lex loci*, or law of the domicil, on the one hand, and the *lex fori* or *rei sitæ*, the law of the place where the subject of the contract is situated, or with reference to which the contract is supposed to have been made, on the other. 1. As to the competency of the contracting parties, it is a universal rule that there must be sufficient age, understanding, and freedom of will. The age at which contracts may be made is different in different countries. By the English and American law the age of 21 years is the time fixed for full legal ability to contract. All persons under that age are called infants, and are under disability to bind themselves except in certain specified cases. Among these is the right to make a contract of marriage, which in England is allowed to males at the age of 14, and to females at the age of 12; by this is to be understood a contract *in præsenti*, for a promise of marriage to take effect in future is subject to the same rule as other contracts. In

France the age of consent to marriage was made by the Napoleon code 18 for males and 15 for females. In this country the English rule prevails. Another of the excepted cases is a contract by an infant for necessaries, such as clothing, food, medical aid, &c.; but he is bound only for what these necessaries are really worth, and not by any agreement he may make for a price beyond that. If, however, the infant is living with a father or guardian who has the means to provide for him, he cannot bind himself even for necessaries, but the parent or guardian is liable for whatever necessaries may be furnished. So he may bind himself as an apprentice; may make a testament of chattels, if a male, at the age of 14, if a female, at the age of 12; and may be an executor at the age of 17. In the state of New York the age for making a testament of personal property is fixed by statute at 18 for males and 16 for females, and an infant under the age of 21 cannot act as executor. A married woman is by the common law incompetent to make contracts; but by statute of the state of New York she may convey or devise her real and personal estate, being her separate property, in the same manner as if she were unmarried, and a similar provision has been adopted in several other states. Sanity of mind is also requisite to the validity of a contract. A person who is, according to legal phraseology, *non compos mentis*, is incapable of making a binding contract. Intoxication was formerly held not to constitute an exemption from liability upon a contract made while in that state; but the rule is now otherwise, and it is held that a contract is void in all cases where the person at the time of making it was without sufficient understanding to know the nature and consequences of the contract, whatever may have been the cause of such disability. Mere imbecility or weakness of understanding, when it does not amount to an entire want of reason, is not sufficient to avoid a contract, but will have great weight in inducing courts to set aside a contract if there should appear to have been unfair practice or imposition by the other party. What is called in law duress, that is to say, any improper restraint forcibly exercised over the will, is a sufficient ground for avoiding a contract made under such influence. 2. In respect to the consideration of a contract, it is a general rule that there must be something mutual. A promise made without any consideration is a *nudum pactum*, and without any legal effect. To this, however, there are two exceptions, viz.: instruments under seal, and bills of exchange or promissory notes, which have passed into the hands of an innocent holder who has given value. The consideration sufficient to sustain a contract may be what is called a good consideration, as natural affection between near relations, or a valuable consideration, as money or some other reciprocal benefit. The former is sufficient, as between the parties, but is not allowed to prevail against the just rights of creditors or other third persons; as if a parent should give money or other property to a child when he was unable to pay his debts, the gift could be avoided by creditors or others having an equitable lien. A valuable consideration may be either a benefit to the party promising, or some prejudice to the party to whom the promise is made. Mutual promises furnish a sufficient consideration, each to sustain the other, provided they are made at the same time. If the consideration be wholly past and executed, it will be insufficient to support a promise founded thereon, unless the prior consideration was something done at the request of the party making the promise. It is unsettled whether an existing moral obligation is a sufficient consideration for a promise. If a debt has been barred by the statute of limitations, or if a debtor has been discharged from payment of his debts by an insolvent law, the original indebtedness is a sufficient consideration for a new promise; but in a case where there had been merely a prior moral and not legal obligation, the weight of authority seems to be that it is an insufficient consideration. 3. The subject of the contract, or what is agreed to be done, must be lawful. A contract is not binding by which any thing is agreed to be done which the law prohibits; so certain contracts are by statute avoided as being contrary to public policy. Instances of this class of cases are contracts of loan where the borrower agrees to pay more than a certain rate of interest, wager contracts, betting upon races, and the like. Money paid or deposited upon a wager or gaming contract can be recovered back. Upon a usurious contract the lender cannot recover even the principal sum; but the borrower cannot get back what he has paid, except the excess beyond legal interest. 4. As to the application of the *lex loci* and *fori* to the construction of contracts and the determination of their legal effect, and the mode and extent of expressing the same, the subject is exceedingly complicated, and will be more appropriately discussed under the proper head. We can advert here but to some few leading principles. A contract, valid at the place where it is made, is in general valid in all other places, and is to be construed according to the law of the place where made; but if the contract is made in one country and intended to be performed in another, then the general rule is that the contract is to be construed and have effect according to the law of the place where it is to be executed. As if a contract be made in England for the loan of money to be paid in the United States, interest may be taken at the rate allowed in the latter country. But if the money should be advanced and security taken in England, although the security should be a mortgage of property in the United States, then the transaction would be governed by the law of England, and only the English rate of interest could be taken. If, however, the money was to be repaid in this country, our courts would hold the contract as having reference to our laws. As to the remedies upon contracts, they are subject to the law of the place where the action is instituted. A foreign statute of limitations can have no effect here; but a discharge under an act of bankruptcy is recognized here, but with a reservation that in the disposition of effects of the bankrupt in this country, all claims of our own citizens shall be preferred.

CONTRERAS. See CHURUBUSCO.

CONUS (Gr. κωνος, a cone), a genus of univalve shells, comprising many species and varieties. The shell is very thick, and appears as if rolled up in conical form. The outer lip is simple and sharp-edged, the inner lip is smooth. The spire is frequently very flat. The mollusk has a distinct head, with gills, a long proboscis, and a pair of tentacula bearing eyes. A horny operculum closes the opening of the shell. The cones are many of them very beautiful both in form and colors, and some specimens bring a high price. They are mostly found in tropical seas, and some are met with in the Mediterranean. They live on sandy bottoms, at depths varying from a few feet to 15 fathoms. Some species occur fossil in the tertiary formation.

CONVENTICLE, properly, a secret, unlawful, and seditious assembly, first contemptuously applied to the assemblies of the Wycliffites in England. The term has since been adopted for all religious meetings of dissenters. In former reigns several statutes were made for the suppression of conventicles; but in the time of William and Mary nonconformists were permitted to gather for the celebration of service, provided their doors were not locked, barred, nor bolted. In the United States, the word has no peculiar application, and is little used.

CONVENT. See MONASTERY.

CONVENTION. This word is employed diplomatically to designate treaties not definite and permanent, but having some special and temporary purpose. In politics, it is employed to designate assemblies of a special and peculiar character. Thus in English history, the meetings of members of former parliaments by which Charles II. and William III. were called to the throne, are known as conventions, or convention parliaments. In America the same term was applied to those bodies which at the commencement of the revolution assumed the powers previously exercised by the colonial governments, and especially to those by which the state and national constitutions were framed. So the body assembled after the deposition of Louis XVI. to govern France and frame a constitution for it was known as the convention. This body was organized Sept. 21, 1792; abolished royalty and proclaimed the republic, Sept. 22; determined to try Louis XVI., Dec. 3; had him at the bar, Dec. 11; condemned him to death by a majority of 26 out of 721 votes, Jan. 20, 1793; established the revolutionary tribunal, March 10; decreed the formation of the committee of public safety, April 6; allowed the arrest of 21 Girondists, June 2; completed the constitution, but suspended its activity, Aug. 10; decreed a universal levy for the national defence, Aug. 23; condemned and executed Marie Antoinette, Oct. 16; appointed a committee with Sieyès as its head to frame a second constitution, April 19, 1794; received and adopted this constitution, June 23; ordered the arrest of Robespierre, July 27; prohibited the affiliation of clubs, Oct. 16; suppressed the Jacobins, Nov. 12; was successfully defended by Bonaparte against the sections of Paris, Oct. 5, 1795; decreed the abolition of capital punishment, handed over the government to the directory and the council of 500, and finally adjourned, Oct. 26, after having been in session 3 years and 35 days, and passed 8,370 decrees. —At present the term convention is applied in America not only to delegated bodies specially assembled by the authority of one or more state legislatures, but to voluntary assemblies of delegates having some change of legislation or policy in view. It is also applied to delegated bodies assembled as the representatives of parties, especially for nominations to office, as to which see CAUCUS.

CONVEYANCE, a term formerly equivalent to voluntary alienation, and including all modes of transferring real estate by the act of the owner, whether by feoffment and livery of seisin, which was a delivery of the possession of the lands themselves in the presence of witnesses, or by an instrument in writing, signed and sealed by the person making the sale, which instrument was commonly called a deed; or by matter of record, as in the cases of fines and common recoveries, which in form were judicial proceedings, but were in fact modes of voluntary alienation; or lastly, by will, which, although like the deed it was an instrument in writing, and required the signature of the testator (but not a seal), did not take effect till after the death of the party executing. Most of the old English forms of conveyance have become obsolete. The deed of bargain and sale, which is more used than any other in England for the ordinary transfer of the fee of lands, is founded upon the stat. 27 Henry VIII., called the statute of uses, for the explanation of which see BARGAIN AND SALE and COMMON LAW. This last mode of conveying real estate became the basis of the forms of deeds used in this country; but in most of the states a still simpler form has been adopted, corresponding more nearly with the grant or common law conveyance of incorporeal estates. In the state of New York the form of deed is prescribed by statute, being called a grant; and various provisions have been enacted in relation to its legal effect, as that no covenant shall be implied (1 Rev. Stat. 738). A conveyance is defined by statute in that state to embrace every instrument in writing by which any estate or interest in real estate is created, aliened, mortgaged, or assigned, or by which the title to any real estate may be affected in law or equity, except last wills and testaments, leases for a term not exceeding 3 years, and executory contracts for the sale or purchase of lands (1 Rev. Stat. 738).

CONVOCATION (Lat. *convocare*, to call together), in the church of England, the assembly of the clergy by their representatives to consult on ecclesiastical matters, which takes place at the opening of every new parliament, under the authority of a royal writ directed to the archbishop of each province. Assemblies of inferior clergy, at the call of their respective prelates, to consult on ecclesiastical affairs, have been common in every Christian country from the earliest times; but, beside such councils, there were two other kinds peculiar to England, from which the present convocation is supposed to be more immediately derived. The first was the meeting of bishops and laity to legislate for the whole kingdom; the second was the assembling of the clergy to assess taxes on their own body at a period when they claimed to be exempt from taxation by parliament. With this latter purpose, convocations had been occasionally held in Saxon times, when the subsidies granted by the church to the crown bore the name of benevolences rather than taxes; but in the reign of Edward I. the practice was more definitively arranged. In such meetings it was but natural that the affairs of the church should be prominent subjects of discussion, and hence, after the surrender of the right of self-taxation in 1665 had deprived the convocation of its political character, it continued to be held nominally for ecclesiastical purposes, though its real power was lost at the reformation. An act was passed under Henry VIII. which restricted it from making any canon or ordinance opposed to the royal prerogative, or to the laws, customs, and statutes of the realm. The king's consent became necessary, not only to give validity to its acts, but to enable it to proceed to business; but although thus rendered virtually almost a nullity, its sessions are still held in London, and a prolocutor or speaker is elected, after which it was customary, until within the last few years, for the archbishop immediately to dissolve the assembly. It consists of an upper and a lower house, the former composed of the bishops, the latter of the inferior clergy, represented by all the deans and archdeacons, one proctor for every chapter, and two for the clergy of every diocese. It has the examining and censuring of heretical and schismatical books and persons, but an appeal lies from its decisions to the king in council or his delegates, nor can it execute its laws and canons except under many restrictions. During the reigns of William and Anne attempts were made by the high church party to give it importance as an ecclesiastical tribunal. The clergy in convocation have the same privileges as members of parliament.

CONVULSIVE DISEASES are those which are accompanied by involuntary contractions of muscles. Convulsions or spasms are generally divided into two kinds: tonic spasms, in which the contraction is comparatively permanent; and clonic, in which there are sudden alternations of contraction and relaxation. In the tonic convulsion, of which tetanus affords a good example, the muscles are rigid and tense, the strongest overpowering the weaker; the jaws may be firmly closed, the wrists flexed on the forearm, the latter on the arm, the body bent backward, and other distortions to which special names have been given, characterized by an unyielding contraction. In the clonic convulsion, the symptoms are more frightful on account of the sudden changes from spasm to relaxation; in epilepsy, for instance, the agitation is extreme, accompanied by loss of consciousness, rolling of the eyes, grinding of the teeth, frothing at the mouth, distortion of the features, jactitation of the limbs, coldness of surface, noisy respiration, and inarticulate sounds. After death, the membranes, the sinuses of the dura mater, and the cerebral substance, may be found gorged with blood, the ventricles filled with fluid, and the spinal cord congested, with various engorgements in the lungs and other organs. On the contrary, in many cases, especially in children, Andral has observed the brain and its membranes almost bloodless; it is well known that in animals dying from loss of blood, life terminates in convulsions. Convulsions originate from some disturbance of the innervation either in the brain or spinal cord, or the nerves arising from them. Young children, in whom the nervous system always grows rapidly, females, and nervous effeminate males, are most liable to convulsive diseases. Among the exciting causes may be mentioned overworking of the brain, prolonged fatigue, mental anxiety, vivid emotions of joy or grief, fits of anger, religious fanaticism, venereal excesses, and, in certain idiosyncrasies, any thing which affects strongly or disagreeably either of the special senses. The condition of pregnancy, especially during parturition, is very liable to spasmodic disease, known as eclampsy; the period of dentition is also subject to similar symptoms; and almost any cause acting energetically upon the nervous system may, where a predisposition exists, excite convulsions. Among diseases which give rise to convulsions are inflammation of the brain and spinal cord and their membranes, softening and tumors affecting the cerebral substance, and wounds of the nervous centres; sympathetic convulsions occur in acute inflammations of the intestinal canal, and from the presence of indigestible food and occasionally of entozoa; after lacerated or punctured wounds; in the course of grave fevers; from the action of strychnine, the saliva of rabid animals, and excessive hemorrhages. Convulsions may be idiopathic, due to irritation, without appreciable alteration of the nervous system, or symptomatic of organic disease of the nervous centres, or merely sympathetic, from the action of other morbific causes on this system. In many cases of hysteria, the convulsive movements seem to be the result of emotional excitement, the expression of an unhealthy and ill-regulated state of mind, unaffected by the power of the will; in others, there is less mental disorder and greater physical excitability, resulting in severe convulsions, resembling tetanus and epilepsy, from very slight external or emotional stimuli; the latter are generally connected with morbid conditions of the uterine system. Hysteria depends on a diseased state far less abnormal than that of other convulsive affections which it often resembles; it may exist for a long time, and in a severe form, without any structural lesion or derangement of nutrition, exhibiting the most protean changes, and frequently ceasing suddenly; the convulsions here seem to depend, according to Carpenter, rather upon some state of the blood in relation to its stimulation of the nervous tissue, than upon any change in its nutritive supply; this unnatural excitability, however, is often induced by impaired nutrition as a predisposing cause, the most common exciting cause being irregularity in the sexual apparatus; this disease, therefore, includes both a disordered emotional state and an abnormal action of the spinal cord. In chorea, or St. Vitus's dance, the jactitating convulsions arise from a diminished power of the will over the muscles, with an increased and perverted activity of the sensory ganglia; the special seat appears to be at the summit of the cranio-spinal axis, where it is connected with the cerebrum; they are sometimes hemiplegic, and occasionally are followed by partial and temporary paralysis. This disease may usually be traced to imperfect nutrition, depending on a depraved state of the blood; it may be considered as an abnormal mode of cerebral activity. Some convulsive disorders seem to depend on an undue excitability of the sensory ganglia, and their paroxysms are not excited unless the patient is conscious of impressions acting through the organs of special sense. In hydrophobia, the sight, sound, or touch of liquids, or even a current of air, is enough to cause the convulsion; in some hysteric persons the sight of a fit in another person is almost certain to induce one in themselves. Dr. Carpenter considers the sensory ganglia as the primary seat of epilepsy, from the sensorial phenomena preceding the paroxysm, the loss of consciousness, and the clonic spasms, which correspond to those produced by artificial stimulation of these centres; the cerebrum, however, is very soon affected, and its powers are seriously impaired in cases of long standing; there is considerable difference in the nature and intensity of the convulsions, the mental powers suffering least when the spasmodic character predominates. Epilepsy may occur periodically, with intervals of tolerable health, and evidently does not depend, as Dr. Todd has well remarked, on the various structural lesions sometimes coincident with it; it may even prove fatal without any appreciable change of structure; that it may be caused by loss or deterioration of the blood, is proved by the epileptiform convulsions of puerperal hemorrhage, asphyxia, and poisoning by prussic acid; such facts indicate a disordered condition of the blood as the primal cause, affecting the nutrition of the encephalic centres and perverting their action; when the nervous system is thus affected, the pressure of a tooth on a swollen gum, the presence of worms in the intestinal canal, and many otherwise trifling sources of irritation, are sufficient to cause the convulsions. There are many convulsive diseases in which the consciousness is not affected, the abnormal action being in the true spinal cord; the most remarkable are tetanus and hydrophobia, in which the spasms are tonic or unremitting, death resulting from asphyxia produced by the spasmodic contraction of the respiratory muscles, the consequence of the suspension of the functions of the medulla oblongata. The muscular system may be affected with a convulsive rigidity in many cases of artificial cataleptic states, produced by mesmeric influences; this condition seems intermediate between muscular rigidity and tonic spasm, and may be kept up for a length of time, and with a power of supporting immense weights in unnatural positions, entirely beyond the natural effort of the will. Tetanus consists essentially in an unnatural excitability of the series of spinal ganglia, very slight external impressions, or even centric irritation, producing strong tonic convulsions; this state may depend on mal-nutrition of the spinal cord from poor blood, on the influence of strychnia, which causes a wrong action of the spinal centres by its alteration of the stimulating properties of the blood, on the introduction of poison into a wound, or on a disturbance of the nervous equilibrium from traumatic irritation of a nerve trunk; when this tetanic state of the cord exists, nothing avails but the most powerful sedatives, and these are generally of little use; the brain is not implicated, the nerves of swallowing being first affected, and afterward those of respiration. Hydrophobia resembles traumatic tetanus in its symptomatic convulsions in the muscles of respiration and deglutition, but it depends on the introduction of a poison into the blood; hence an early removal of the bitten part, or the speedy neutralization of the virus, is the only means of prevention, and these are rarely efficacious; the convulsions of hydrophobia, however, are excited by stimuli transmitted from the sensory ganglia or even the cerebrum. Other limited convulsive diseases are: spasmodic asthma, in which the medulla oblongata seems alone implicated, the attacks generally depending on pulmonary or digestive irritation, which produces a reflex contraction of the bronchial muscular fibres; the spasmodic stage of pure whooping cough, persisting after the subsidence of inflammation, the morbid condition originating in a poisoning of the blood; the croup-like convulsions of infants, in which the constrictors of the larynx contract spasmodically, and prevent the free passage of air through the rima glottidis, and for which the best remedy is to secure an improved nutrition by pure air and wholesome food; tenesmus and strangury are spasmodic contractions of the muscles of the anus and the neck of the bladder, the spinal centres being excited by local irritation; the contents of the uterus are sometimes prematurely expelled by spasmodic contractions similarly excited; some forms of colic are caused by abnormal action of the muscular coat of the intestines. Death in idiopathic tonic convulsions generally takes place from asphyxia; in clonic convulsive diseases, from cerebral congestion and consequent effusion. Convulsions arising from cerebral disease may alternate with paralytic affections; those from sympathy with lesions in other organs subside when the exciting cause is removed. In young or feeble persons various contractions and deformities sometimes follow convulsions, and require surgical interference for their relief. Idiopathic convulsions occur in the midst of apparently perfect health, and may suddenly cease without troublesome consequences; while the others are accompanied by the symptoms of the exciting disease. The convulsions in tetanus and hydrophobia rarely continue for more than 10 days, when death closes the scene; in hysteria and epilepsy, they may be prolonged for several hours; puerperal convulsions are generally of a few minutes' duration, and repeated at short intervals; chorea is an essentially chronic affection. Convulsions occurring in very impressible persons, women and children, are less grave than those in individuals of the opposite temperament, and such as occur as complications in other diseases.—From the many kinds and causes of convulsions, it is evident that a correct diagnosis is indispensable to rational treatment. According to circumstances, easily recognized by the physician, venesection must be employed or avoided; the other remedies are revulsives to the skin and intestinal canal, narcotics, anti-spasmodics, and especially ether and chloroform by inhalation; for chorea and chronic spasms, electricity and magnetism are of great advantage; for epilepsy, compression of the carotids is extolled beyond measure by some writers; cold affusions and applications of ice are valuable in many cases. The treatment of symptomatic convulsions must of course be addressed to the exciting disease.

CONWAY, a central co. of Arkansas, washed by Arkansas river on its S. W. border; area, 1,200 sq. m.; pop. in 1850, 3,583; in 1854 it had decreased to 3,380, of whom 201 were slaves. The surface is agreeably diversified by mountains and valleys, and the soil well suited for the growth of corn and cotton. The productions in 1854 were 192,302 bushels of Indian corn, 2,302 of wheat, 16,625 of oats, and 877 bales of cotton. There is an abundance of good pasture land; the streams furnish valuable water power, and the country along the Arkansas river is rich in stone coal. Capital, Springfield.

CONWAY, CONWY, or ABERCONWY, a market town and watering place of Caernarvonshire, N. Wales, on the left bank of the river Conway, near its mouth in Beaumaris bay, 18 m. N. E. of Bangor, and 233 m. by the Northwestern and the Chester and Holyhead railways N. W. of London; pop. in 1851, 2,105. It has some ship-building yards, and exports timber, lead, and slates, but possesses little commercial importance. The harbor is nearly dry at low water. A suspension bridge 327 feet long, begun in 1822 and finished by Telford in 1826, at a cost of about $200,000, connects the town with a rock in the stream, whence an embankment 2,015 feet long and 30 feet wide at the top, formed of mountain clay faced with stone, extends to the opposite bank. A tubular railway bridge of wrought iron was built here by Mr. Robert Stephenson in 1848; it is 400 feet long, 18 feet above high-water mark, and cost $550,000. The castle was founded in 1283, by Edward I., who was besieged here and nearly starved into a surrender by the Welsh in 1290; its walls, overgrown with ivy, are from 12 to 15 feet thick.

CONWAY, THOMAS, major-general in the army of the American revolution, born in Ireland, came to America from France in 1777, at the recommendation of Silas Deane, to aid in the discipline and formation of the army. He had a considerable reputation in France as an officer, where he had been educated to the profession of arms, and expecting from congress the commission of major-general, was disappointed by being made in May, 1777, only a brigadier. During the arduous winter of that year, when Washington had his camp at Valley Forge, Gen. Conway was one of the most active of his secret enemies, endeavoring to procure the elevation of Gen. Gates to the supreme command. He had been in Nov. appointed by congress inspector-general, with the rank of major-general, notwithstanding Washington had written a letter to a member of that body remonstrating against his promotion; a fact which proves that a strong influence unfriendly to Washington at that time existed in the continental congress. So prominent was he in the efforts made to foster discontent in the public mind by writing anonymous and forged letters, and by spreading insinuations against the commander-in-chief and strictures on his conduct, that the whole conspiracy became known as "Conway's cabal." His character, early discovered by Washington, was at length understood by congress. His pretensions and offensive language made him unpopular in the army, and early in 1778 he sent to the president of the congress the resignation of his commission, which to his surprise was immediately accepted by that body. He had many difficulties with American officers; was challenged, July 4, 1778, by Gen. Cadwallader, and received a ball in the head; supposing the wound fatal, he wrote a letter of apology to Washington, dated at Philadelphia, July 23, 1778, containing the expression: "You are in my eyes the great and good man." He recovered, however, and returned to France in that year. The date of his death is not known.

CONY. See RABBIT.

CONYBEARE, John, an English prelate, born at Pinhoe, near Exeter, in 1692, died at Bath, July 13, 1755. He studied at Exeter college, Oxford, received orders, and was curate at Fetcham in 1717. He returned to Oxford in 1718, became successively tutor in his own college, preacher to his majesty at Whitehall, rector of St. Clement's, Oxford, and in 1730 master of Exeter college. In 1732 he published his celebrated answer to Tindal's "Christianity as old as the Creation," which Dr. Warburton styles one of the best argumentative works in literature. In that year also he was appointed dean of Christchurch; and in 1750 he succeeded Dr. Butler in the bishopric of Bristol.—John J., an English divine and geologist, grandson of the preceding, born in 1779, died in 1824, was educated at Christchurch college, Oxford, became usher in Westminster school, and in 1807 was elected to the Anglo-Saxon professorship in the university of Oxford. He became professor of poetry in 1812, and preached the Bampton lecture in 1824. He made valuable contributions to the annals of philosophy and science, and wrote an important work upon Saxon poetry.

CONYBEARE, William Daniel, an English divine and geologist, dean of Llandaff, born at Bishopsgate, June 7, 1787, died at Itchenstoke, near Portsmouth, Aug. 12, 1857. He received his degree of B. A. in 1808, and of M. A. in 1811, at Christchurch college, Oxford. He was one of the earliest and most active members of the geological society, to whose "Transactions" he was a frequent contributor. He discovered and first described in 1821 the plesiosaurus, the most heteroclite and monstrous in structure of all the antediluvian animals of which geologic research has found traces. The discovery was applauded by Cuvier and Dr. Buckland as one of the most important additions to the sciences of geology and comparative anatomy, and it opened the path of discovery which has been further illustrated by the labors of Dr. Owen. Mr. Conybeare also furnished several papers on the coal districts of England, which are especially valuable as proving the relations between some of the principal British rocks and the order of their superposition. He was a fellow of the royal society, elected in 1818, and a corresponding member of the institute of France.—His son, W. J. Conybeare, died in 1857, was a prominent clergyman of the broad church party of the Anglican church. He published essays in the "Edinburgh Review" on ecclesiastical and social topics, one of which, on the parties within the Anglican church, attracted general attention. These were afterward collected in a volume; and a volume of his sermons preached at the chapel royal, Whitehall, was also published. He was author of nearly all but the translations in Conybeare and Howson's "Life and Epistles of St. Paul," which appeared in London in 1854, and was immediately after republished in this country. He also wrote a novel entitled "Perversion, or the Causes and Consequences of Infidelity," which was published a short time before his death, and in which the religious aspect of the times was exhibited and discussed.

COOK, a N. E. co. of Ill., touching Ind. and Lake Michigan; area 1,027 sq. m.; pop. in [illegible], 103,960. The surface is level or undulating, much of it being occupied by prairies. The soil is remarkably rich and deep. Wheat, corn, oats, and hay are produced in abundance, and form the principal staples. The flat land was formerly thought unfit for cultivation, but is now generally esteemed the best since careful tillage has developed its richness. The productions in 1850 were 429,518 bushels of Indian corn, 288,952 of wheat, 403,234 of oats, 48,449 tons of hay, 27,954 lbs. of wool, and 656,690 of butter. There were 87 churches, 21 newspaper offices, and 8,910 pupils attending public schools. The county is traversed by the Illinois and Michigan canal, and by various railroads centering in Chicago, its capital, and the chief commercial city of Illinois. It is the most populous part of the state. It was organized in 1831, and named after Daniel P. Cook, a member of Congress from Illinois, by whose exertions a grant of 300,000 acres of land was obtained from the United States to aid in the construction of the Illinois and Michigan canal.

COOK, Charles, D.D., president of the French Wesleyan conference, died Feb. 21, [illegible]. He was appointed by the British conference in 1818 to the French mission, where he labored with great zeal until 1824, when he was appointed missionary to Palestine. His labors in France, which were only interrupted by one year's absence in Palestine, were signally successful, commanding the admiration of Methodists at home and abroad. His executive power, united with his zeal and industry, justify the remark of the venerable Merle d'Aubigné, who in a letter to Mr. Gallienne, the present president of the French conference, says: "Dr. Cook was the John Wesley of the continent, being to France, Switzerland, and Sardinia, what Wesley was in his day to England, in awakening the attention of multitudes to the vast concerns of religion and eternity."

COOK, Eliza, an English authoress, born in London about 1818. Her father was a [illegible] by trade, who resided in Southwark, where the greater part of her childhood was passed. At the age of 15 she lost her mother, a woman of many virtues and of attainments superior to her condition in life, and for some years her home was neither pleasant nor happy. She had early evinced a taste for poetry and literature, and now sought to find in intellectual pursuits the means of contentment, as well as of emancipating herself from the circumstances by which she was surrounded. Her thoughts first found expression in verse, and in 1837 she became a regular and well paid contributor to the London "Weekly Despatch," owned by James Harmer. In 1840 a collection of her poems, under the title of "Melaia and other Poems," was published in London, and in the succeeding year republished in New York, with many ions by the author. In 1849, having al- acquired some reputation as a prose made her appearance as the editress Cook's Journal," a weekly publica- d, in her own words, "to aid the uggle for intellectual elevation now ." For several years it was the vehi- ny vigorous prose articles and new m her pen, but was discontinued in account of her illness. She afterward her former avocations, and is still a r in prose and verse to periodicals to the social and intellectual improve- the lower classes.

OK, **Capt. James**, an English navigator, Oct. 27, 1728, in the village of Marton, e, England, killed at the Sandwich isl- . 14. 1779. His parents were in hum- ces, his father being a farm labor- in his 18th year the future navigator, been taught reading and writing in a school, was apprenticed by his parents aberdasher in Staiths, a little fishing town Whitby, a coal port. The father dying, Cook persuaded his master to give up his tures, and being thus set free, he at once ged himself as cabin boy in one of the col- of Whitby. It is stated that he appren- himself here for 9 years. He remained in rade until his 27th year, occupying during reater part of the time the positions of mate er. In 1755, the war between England creating a demand for seamen, Cook ed in the royal navy and served before the in the Eagle, 64, where Capt. (afterward ugh) Palliser promoted him to the quarter for his efficiency and steadiness. He was essively of the sloop Grampus and , and on May 10, 1759, 4 years after the navy, had his master's rank con- by the admiralty. He was at this time to the Mercury. It should be said post of master in the British navy is greater honor than profit, and of greater than either. The master must be an ex- t sailor, and a man ready for any duty h comes to hand. He takes charge in many nsible positions, but ranks below the lieu- ts, who are at the same time younger and xperienced men than he. The master is at ead of his line of promotion, and it is only where extraordinary merit has been dis- that he is permitted to rise to a real mand. The Mercury frigate was one of a ron sent out to coöperate with Gen. Wolfe storming of Quebec. Finding that the h had removed the buoys which marked annel of the St. Lawrence, Cook was ap- ed to the responsible task of making new ings for a new set of buoys. He piloted ats of the squadron to the attack of Montcy; conducted the disembarkation of the s for the assault on the heights of Abra- and having completed his soundings, pub- a chart of the channel of the St. Lawrence from Quebec to the sea. Being now promoted to the Northumberland flag ship, he made use of the leisure there obtained to study mathematics and astronomy. In 1762 he was present at the recapture of Newfoundland. Returning to England, he married in the same year, and in 1763 came out to survey the coast of Newfoundland; and in the following year was appointed marine surveyor of that coast and Labrador. Meantime he had published a number of charts, and while near Cape Ray he was able to observe an eclipse of the sun. The record of his observations, published in the "Philosophical Transactions," showed such accuracy compared with other observations, that this greatly raised his reputation as an astronomer. When, therefore, the royal society, desirous to observe a transit of Venus over the sun's disk, which could only be done in parts of the Pacific ocean, obtained the consent of the king to the fitting out of an expedition for this purpose, Cook was the man chosen to command the vessel. He received accordingly a royal commission as lieutenant; himself chose the Endeavor, of 370 tons, as the expedition ship, and sailed Aug. 28, 1768, from Plymouth, accompanied by Mr. Green as astronomer, and Mr. (Sir Joseph) Banks as naturalist of the expedition. April 13, 1769, the Endeavor reached Otaheite, where Cook set up the instruments, and the necessary astronomical observations were successfully made. Geographers at this time had a theory of a great southern continent, and to the discovery of this Cook next turned his attention. Though unsuccessful in this point, his voyage was not without very important results. He rediscovered and named New Zealand, and first saw the narrow strait which divides it into 2 parts; took possession of the Australian coast about Botany bay in the name of the king of Great Britain, and laid down 1,300 m. of the coast line of that island; established by actual trial the entire separation of the islands of New Holland and New Guinea; after various escapes from shipwreck and native hostility, put into Batavia to refit, where 30 of his men died of the country sickness; and finally reached England, June 11, 1771, having in less than 3 years successfully circumnavigated the globe, and fulfilled the various objects of the expedition. He was immediately made master and commander. Australia being demonstrated to be an island, the great southern continent was supposed to lie nearer the pole. To settle this point, toward which the voyages of Byron, Wallis, and the first of Cook had greatly attracted public attention, it was determined to send out another expedition. Two ships, the Resolution, of 462 tons and 112 men, commanded by Cook, and the Adventure, of 336 tons and 81 men, commanded by Tobias Furneaux, were abundantly supplied with stores of all kinds, and sailed from Plymouth, July 13, 1772, with instructions to "circumnavigate the whole globe in high southern latitudes, making traverses from time to time into every part of the Pacific ocean, which had not undergone previous investigation; and to use his best endeavors to resolve the much agitated question of a southern continent." The cape of Good Hope was reached, Oct. 30, 1772. From here the expedition set out for its discoveries; but after sailing over 3,660 leagues, reaching lat. 71° 10′ S., in long. 106° 54′ W., and being out of sight of land 117 days, the Resolution at length (May 18, 1775) rejoined the Adventure, from which she had been separated 3 months before, at New Zealand, their appointed rendezvous. Cook was now satisfied that no such continent existed at the south as had been supposed. After wintering in the Society islands, however, he again sailed south and examined the waters to the eastward of his former cruise, between lat. 60° and 70°; then explored the ocean between lat. 43° and 56°, from Easter island to the New Hebrides; discovered and named the island of New Caledonia; and finally turned eastward toward Cape Horn (discovering on the way a desolate island, to which he gave the name of Sandwich land), and returned by way of the cape of Good Hope to England, arriving July 30, 1775, after an absence of 3 years and 16 days, in which time the vessels had sailed over 20,000 leagues. Cook was at once made post captain, and, by way of giving him a sufficiency to retire on, was appointed a captain of Greenwich hospital. He was also chosen member of the royal society, Feb. 29, 1776, and received the Copley gold medal for the best experimental paper of the year. During his absence the possibility of achieving a north-west passage to Asia had begun again to occupy the public mind. Cook presently volunteered to take charge of an expedition to ascertain its practicability by making the attempt by way of Behring's straits. He sailed from the Nore, June 25, 1776, with 2 ships, the Resolution and Discovery, the latter under command of Capt. Charles Clerke. Losing the first favorable season for the northern seas, the interim was employed by the expedition in visiting various groups then but little known in the south Pacific, verifying the positions of islands, and discovering new ones. In Jan. 1778, on his way toward Behring's straits, he discovered the group which he named the Sandwich islands. Circumnavigating these, and laying down their position on the chart, he reached the coast of America in March, sailed up a sound since known as Cook's inlet, and finding no passage through, sailed toward Behring's straits. Here he was stopped by an impassable barrier of ice. He reached the point still known by the name he gave it, Icy cape, Aug. 18, 1778, and did not turn back till the end of the month, when he found it impossible to proceed. Returning to the Sandwich islands to prepare for another attempt northward next year, the largest of the group, Hawaii, was discovered, as also Maui. At Hawaii the natives received the Englishmen kindly, and proved themselves a peaceably disposed, tractable race. It was soon found, however, that they were given to stealing. Various expedients were devised to prevent and punish this crime, but without effect. Finally, during the night of Feb. 13, 1779, one of the Discovery's boats was stolen; and Cook, to recover this important loss, proceeded to take possession of the king's person to hold it until the boat was restored—a measure which he had found effective among other islanders. Landing for this purpose on the morning of the 14th, with a lieutenant and 9 marines, he persuaded the king to accompany him on board the Resolution. Suspicion being awakened, however, as to his motives, the king was induced to hesitate. Meanwhile trouble had arisen on the beach between the whites and natives. A boatman from the opposite side of the bay brought a report that a chief had been killed by a shot from the Discovery. The natives armed, and a crowd accompanied the whites down to the shore, imploring the king not to trust himself in their hands. One of the king's sons was already in the boat, when the crowd growing furious, individuals began to attack the marines. A chief assaulted Cook, who retaliated with a charge of shot, which, not taking fatal effect, rather emboldened the crowd. Cook, who does not seem to have known fear, insisted on taking the king on board, until the assault became general and the whites were thrown into confusion. A volley of stones was replied to by a volley from the muskets of the marines, which for the moment intimidated the assailants. But a chief being killed by Cook, the crowd again advanced, and the assault became general. The men embarked precipitately. Cook was struck as he turned to the boats, and fell on his face in the water, and the crowd rushed on him and kept him down until his wounds and his struggles exhausted him. When he was dead, his body was dragged ashore in ferocious triumph, and each of the assailants stabbed it in turn, to take his share of the deed; after which the natives retired, as though afraid of the consequences of what they had done. The body, and those of the marines slain, were afterward cut up, and only the bones of the great navigator were recovered by the expedition 7 days later, after a severe contest with the natives. These were deposited in a coffin, and buried in the sea. After another attempt in Behring's straits, the expedition returned home by way of China. Cook's widow received a pension of £200 per annum, and each of his children £25 per annum.

COOKE, a N. co. of Texas, separated by Red river from the Indian territory; area, 5,800 sq. m.; pop. in 1856, 1,872, of whom 115 were slaves. A large portion of the surface is occupied by a forest called the Upper Cross Timbers. The Brazos is the principal river. The soil produces corn, potatoes, and grass, and the productions in 1850 were 5,870 bushels of Indian corn, 437 of sweet potatoes, and 5,249 lbs. of butter. Value of real estate in 1857, $242,640. Capital, Cooke Court House.

COOKE, George Frederic, an English actor, born in Westminster, April 17, 1756, died in New York, Sept. 26, 1812. His father, an Irish captain of dragoons, died soon after his birth, and his mother removed to Berwick-upon-Tweed, where he was placed at school, and afterward articled to a printer. A strolling company having interested him in theatricals, he often arranged private performances with his companions, and when out of money managed to steal unperceived into the theatre. He threw up his indentures in 1771, went to London, and thence for a short time to Holland, and after various private essays first appeared as a professed actor in Brentford, in 1776, as Dumont in the tragedy of "Jane Shore." He performed at the Haymarket in London in 1778, without attracting attention, and after being a member of several provincial companies first obtained great applause at Manchester in 1784. In 1794 he joined the Dublin company, became the hero of the stage at Dublin, Cork, and Manchester, and in 1800 accepted an engagement at Covent Garden, London, where he appeared with decided success in the character of Richard III. For 10 years he was the rival of John Kemble, and played both in tragedy and comedy in the largest cities of Great Britain. His most popular characters were those of Richard III., Shylock, Iago, Sir Giles Overreach, Kitely, and Sir Pertinax Macsycophant. His habits of intemperance were inveterate, and though his abilities made him a favorite of the public and a theme of discourse in every society, he gave his managers constant vexation. In 1810 he sailed for America, and on Oct. 21 appeared as Richard III. before over 2,000 spectators in a theatre of New York. The curtain having been raised, he advanced to the front of the stage, and requested the audience to stand while "God save the King" should be played. A tumult ensued, but the tragedian only took snuff till the demand was complied with. His conduct was equally capricious and contemptuous at Philadelphia and Baltimore, though he attracted audiences almost unexampled in this country in numbers and intelligence. His death was hastened by habitual intemperance, which totally changed and infuriated his character. His memoirs were written by William Dunlap in 1812, and notes of his conversation, and many incidents of his life and associates in New York, are contained in Dunlap's novel of "Thirty Years Ago," published in 1836.

COOKE. I. John Rodgers, an American jurist, born in Bermuda in 1788, died in Richmond, Va., Dec. 10, 1854. During an arduous professional career of more than 40 years, he was concerned in nearly all the great causes carried to the higher courts of Virginia. In 1813 he held a commission in the Frederic troop which marched to the seaboard when the Chesapeake was fired upon, and in the following year served in the legislature. In 1829 he represented the Frederic district in the convention of that year, which is said to have embraced more famous men than any other public body which ever assembled in America. He was a prominent leader of the western party, and on the rising of the body was appointed one of the committee of 7—including Chief Justice Marshall, ex-President Madison, John Randolph, Watkins Leigh, and others—to draft the constitution. He never afterward held public office, but devoted his entire attention to the law, up to the period of his death. Mr. Cooke's mind was vigorous, penetrating, and singularly clear-sighted; in many things it resembled that of his friend Judge Marshall. In private life he was greatly beloved. An associate who knew him long and well, declares him to have been "the model of lofty courtesy, chivalry, and generosity." II. Philip Pendleton, son of the preceding, an American poet, born in Martinsburg, Va., Oct. 26, 1816, died in Jan. 1850. Mr. Cooke was graduated early at Princeton college, and returning to Virginia, studied law in the office of his father, was admitted to the bar, and married before he was 21. For the law, however, he never seems to have felt much partiality. At college, the greater portion of his time had been given to the study of poetry and belles-lettres; and these tastes now impelled him toward literary pursuits, rather than those of his profession. He published several poems in the "Knickerbocker" magazine at an early period, and on the establishment of the "Southern Literary Messenger," became one of its contributors. Mr. Cooke's only publication in book form was "Froissart Ballads and other Poems," which appeared in 1847. At the time of his death he was publishing serially the "Chevalier Merlin," a historical prose poem, which was greatly esteemed by competent judges. Mr. Cooke was endowed with rare abilities, but was defective in that ambition which impels to great undertakings. He was ardently devoted to field sports, and, surrounded at his estate in the beautiful valley of the Shenandoah with every temptation to these pursuits, he seems to have given slight thought to the outer world, regarding his muse rather as a loving companion than a mentor, and tranquilly living the life of a genial country gentleman. In private life he was greatly beloved and admired for the charms of his conversation, and the extreme kindness and warmth of his heart. His writings are characterized by grace, great picturesqueness, and animated coloring. His prose often rises into vivid poetry. The "Froissart Ballads" are rapid, striking, and moving poems, but his most popular pieces are the short lyrics, "Florence Vane," "To my Daughter Lily," and "Rosa Lee." The first of these has been translated into many languages, and taken as a theme for music by celebrated composers. Mr. Cooke was in the prime of life when he was seized with an illness which terminated quickly and fatally. He died at his home near the Blue Ridge, at the age of 33. III. John Esten, an American novelist, brother of the preceding, born in Winchester, Va., Nov. 3, 1830. His boyhood was spent mostly at

Glengary, the seat of his father in Frederic co., until 1839, when the Cookes removed to Richmond. Here he was sent to school, and subsequently studied the law, obtaining his license and entering upon the practice in 1851. With a decided taste for the pursuits of literature, he made his appearance in authorship in 1854, in 3 works of fiction: "Leather-Stocking and Silk," the "Virginia Comedians," and the "Youth of Jefferson." Of these, the "Virginia Comedians" was by far the most successful, and soon attained a great popularity. In 1855, he published "Ellie, or the Human Comedy," and in 1856 the "Last of the Foresters." Another work, entitled "Henry St. John, Gentleman," is now (Dec. 1858) in press in New York. A fondness for domestic themes and a strong attachment to Virginia soil mark all Mr. Cooke's writings, and it is with an entire love of the subject that he has undertaken to write "Virginia, Historical and Social," a work for which he is engaged at the present moment in collecting the materials. Of unflagging industry in letters, he writes much for the "Southern Literary Messenger," "Harper's Magazine," and other periodicals. He has also written poems of which the most striking, perhaps, is an elegiac tribute to Dr. E. K. Kane. IV. PHILIP ST. GEORGE, a brother of John R. Cooke, lieutenant-colonel in the U. S. dragoons, born in Berkeley co., Va., in 1809. At the age of 18 he was graduated at West Point, with a lieutenant's commission, and entered the army. He took part in the Black Hawk war, was at the battle of Broad Axe, and has since served in many parts of the continent. In 1846, having conducted the "Mormon brigade" to California, he commanded a company in the Indian war there. In 1855, while in command at Fort Union of one of the great departments of New Mexico, he fought the battle of Cineguilas, defeating the Comanches. During the Kansas agitation he "commanded in the field," being intrusted with the responsible task of carrying out the instructions of the administration. This delicate and arduous duty he performed to the satisfaction of all. He was afterward an officer of the Utah expedition. The story of his march across the plains, amid snow and tempest, is full of interest, and has been widely published.

COOKERY, the preparation of food from the natural aliments, by dressing, compounding, and the application of heat, an art so universal that some philosopher has defined man to be "a cooking animal." It takes its origin from the necessities of men, who, though omnivorous, are so organized as to require concentrated food, the stomach being too small to carry enough merely vegetable matter to replace the daily waste of the system, excepting in the warmest latitudes. The philosopher Posidonius was of opinion that the culinary art followed immediately the discovery of fire, and that it was at first an imitation of the natural process of mastication and digestion. "As the seeds," says he, "were ground by the action of the teeth, moistened by the saliva, kneaded, as it were, by the tongue, and fermented, heated, and converted into food in the stomach, as in an oven; so mankind, imitating nature, bruised their grain with stones, mixed the flour with water, kneaded and formed it into cakes, which they baked in heated ovens." Milton ascribes to the mother of mankind great proficiency in this art:

On hospitable thoughts intent,
What choice to choose for delicacy best,
What order so contrived as not to mix
Tastes not well joined, inelegant, but bring
Taste after taste, upheld with kindliest change.

In Biblical antiquity, Abraham entertained the three angels with cakes of fine meal, and with a carefully dressed, tender, and good calf; Rebecca prepared savory meat for Isaac; the chief butler and chief baker were important officers in the household of Pharaoh; and the children of Israel took kneading-troughs and unleavened dough with them in their march through the wilderness. In the East, the land of spices, the taste was first tempted by carefully wrought compositions and condiments, and the first great feasts were given. It was the custom of the ancient Egyptians, as at present in oriental and tropical climates, to cook the meat as soon as killed, with the same view of having it tender which makes northern people keep it till the approach of decomposition. Beef and geese constituted the principal part of the animal food, though the kid, goat, gazelle, duck, teal, and quail were also well known. Mutton was excluded from a Theban table, and Plutarch says that no Egyptians except the Lycopolites would eat the flesh of sheep. The blood of animals was frequently received into a vase for purposes of cookery, and black puddings were popular in Egypt, as they afterward were in modern Europe, to the horror of the Moslems. One joint, often represented in ancient sculptures and still common at a modern Egyptian table, but totally unlike any European joint, consists of the flesh covering the central part of a bone, the two extremities of which project beyond it. Large supplies of fish were obtained from the Nile and Lake Mœris, and were brought to the table whole, boiled or fried, the tail and fins being removed. Herodotus says that no Egyptian will taste the head of any species of animal. Boiling and roasting were the only processes, until in the reign of King Menes various styles of artifical cookery were introduced. The boiling appears from representations in sculpture to have been done in caldrons, supported on stones or tripods, and heated either by faggots of wood or by charcoal. The vegetables which abound in Egypt made a large part of the ordinary food, and they were eaten raw, stewed, boiled, or roasted in ashes. The workmen who built the pyramids are described as living on raphanus (a sort of turnip-radish), onions, and garlic; lentils also were then, as now, a principal article of diet. In the nummulite rock near these monuments there are imbedded testacea resembling small seeds, which were supposed by Strabo to be the petrified residue of lentils left there by laboring people. During the inundations of the Nile the lotus and papyrus, like the acorn in northern climates, were the chief aliment of the poor. Dates, figs, grapes, onions, gourds, cucumbers, watermelons, and leeks were favorite fruits, some of which were regretted by the Israelites after they left the country. Onions, however, were prohibited to the priests. Bread was made either of wheat or of barley, and the dough was sometimes kneaded with the feet in a wooden bowl on the ground. Pastry was made to represent a three-cornered cake, a crocodile's head, a recumbent ox, a leaf, a heart, or various other objects, according to the fancy of the confectioner, and was sprinkled with seeds of caraway, cummin, or sesame. The lotus blossom was a common ornament upon kitchen and table furniture.—The Greeks raised every department of cookery to a character of high art. Prometheus is said to have first slaughtered cattle for culinary purposes, Ceus to have killed the first hog, and Bacchus to have struck down the first deer, in order to save from its fangs his young vines. In the rude simplicity of the Homeric age royal personages prepared their own meats, and Menelaus at the marriage feast of Hermione placed before the guests with his own hands the roasted side of an ox. Achilles, with the assistance of Patroclus, feasted the Argive leaders upon the shoulders of lambs, a fat doe, and a succulent pig, which were broiled on live coals and garnished with the entrails of oxen; dishes, according to Athenæus, "consecrated to the gods, and usual at all the feasts of the brave." Though Ulysses boasted his skill in the culinary art, the Homeric heroes seem to have had no conception of the refinements to which their luxurious successors attained. They were contented with plain roasts, seldom boiling their meat or dressing it with sauces. Professional cooks had come into existence before the age of Pericles, and carried their art to masterly perfection. They could serve up a whole pig dexterously boiled on one side, roasted on the other, and stuffed with flavored and spiced thrushes, eggs, and various delicacies, so that the guest could not discover where the animal had been divided. Being asked to explain one of his processes, an Athenian cook solemnly swore by the manes of those who died at Marathon and Salamis that he would not reveal his secret that year. Painting, sculpture, music, and dancing were all placed under contribution to add to the gayety and splendor of festivals, at which philosophers and poets discussed and sang. To invent a popular cake or a poignant sauce was a worthy object of ingenuity and erudition. Thus Aristoxenes after many trials succeeded in a peculiar way of seasoning hams, which were hence called Aristoxenians; as afterward the Roman Apicius, one of the three gastronomers of that name, devised a sort of cakes which were termed Apicians. Among the most esteemed delicacies of the Greeks were the kids from Melos, the head of the conger from Sicyon, the whiting from Megara, the eel from Lake Copais, the scaly orb-fish, caught only by moonlight, the apples of Eubœa, the dates of Phœnicia, the quinces of Corinth, the almonds of Naxos, goldfishes, sparrows, and robins. Galen praises the flesh of young foxes in autumn when they feed on grapes, and Hippocrates esteemed the flesh of puppies equal to that of birds. Nearly all the Athenian dishes were prepared with a mixture of asafœtida or rue, and one of the most popular was a composition of cheese, garlic, and eggs. Though cheese was claimed as the invention of Aristæus, king of Arcadia, yet, as it had long been known to the Hebrews, it may have been introduced from them among the Greeks. In Bithynia a salad was made of it, by uniting it with slices of bread, soaked in vinegar and water, and mixed with mint, garlic, and green coriander. At Athens cheese was a part of the diet of athletes, and was always included among the munitions of war. That made from the camel's milk was, according to Aristotle, in the highest esteem. Butter was hardly known to the Greeks in the time of Aristotle, though half a century later a brisk trade was driven with the barbarians who furnished it. Both the Greeks and Romans extracted delicacies from the tough membranous parts of the matrices of sows, the flesh of young asses and young hawks, and from a great variety of sea-fish, as the dog-fish, starfish, porpoises, seals, and especially from 2 species termed the *echinus* and the *glociscus*. The Syracusans were especially noted for their gastronomical successes, while the Spartans, despising luxury of all kinds, had the term of reproach "to live like a Syracusan." A certain Sybarite, after tasting the Lacedæmonian black broth (μελας ζωμος), declared himself no longer astonished that the Spartans were so fearless of death in battle, since the pains of dissolution were preferable to those of existence on such execrable food. The poet Archestratus, a culinary philosopher of Syracuse, travelled through the most fertile lands known to the ancients, crossing many seas, and passing through many dangers and hardships, in order to add edibles and potables from every climate to the Greek table luxuries. His "Gastrology," a didactic poem in which he promulgated the result of his researches, like a legislator dictating a code of laws, became the authoritative creed of Greek epicures. It was a favorite exercise of the most accomplished cooks, when rare and choice fish were wanting, to imitate their flavor, taste, and form so closely from inferior varieties that the most experienced gourmand could not distinguish the fraud. Philoxenus wished that he possessed a crane's neck, that he might be the longer in enjoying his dainties. He is said to have disciplined himself by the hot bath and by drinking scalding water till he could swallow the hottest dishes, and then by bribing the cooks to serve up the repast at boiling heat he was able to devour what he pleased before his fellow guests ventured to touch a dish; whence they styled him "an oven, and not a man." The

Greeks excelled in sweetmeats, fruits, and the artistic ornaments and order of an entertainment, but the Romans in the more solid dishes, in learned sauces, in extravagant splendor, and in gastronomical excesses and absurdities. Simplicity of tastes and severity of manners disappeared during the latter part of the republic, and under the empire luxurious gluttonies, often upon unnatural and *outré* dishes, were indulged at almost fabulous cost. The more common Roman delicacies were pheasants, fig-pickers, quails, partridges, oysters, sea-eels, and Cecubian and Falernian wines. Rare fishes and birds were objects of special luxury, and after Rome had learned from every neighboring country their best devices of cookery, native productions were despised, while at a single festival there would be served up peacocks from Samos, chickens from Phrygia, kids from Melos, cranes from Ætolia, tunny-fishes from Chalcedon, pikes from Pessinus, oysters from Tarentum and from Britain, mussel-fishes from Chios, and dates from Egypt, with various foreign condiments. Curious artificial means of raising delicacies for the table were employed. According to the elder Pliny, snails were sometimes fattened till their shells would contain several quarts. Geese, peacocks, and fish were raised upon nourishment specially adapted to temper them as food, and swine were fattened on whey and figs. Five meals a day hardly sufficed to satisfy the pampered appetites of epicures, and it was not unfrequent for them by means of emetics to rid themselves of a repast that they might immediately renew their gastric enjoyments. The supper, which was their principal meal, consisted of 3 courses: the 1st, of soups, lettuce, eggs, and honeyed wines; the 2d, of solid meats, ragouts, broiled viands, and fish; and the 3d, of crude fruits, preserves, tarts, and sweet dishes; the meals thus, according to a common saying, "beginning with eggs and ending with apples." These courses were sometimes succeeded by oysters. In their gastronomic experiments, it has been said that they tasted every thing, from the cricket to the ostrich, and from the dormouse to the wild boar. Some fishes were so costly that Cato once declared that "a city cannot endure in which a fish is sold for more than an ox." Antony having denied to Cleopatra the possibility of making one entertainment cost more than a certain sum, she is said to have dissolved a pearl of that value, and to have drunk the solution at the close of the repast. Apicius usually resided at Minturna, in Campania, where he obtained shrimps of the best quality at the highest price. Hearing that larger ones were produced in Africa, he immediately embarked for that country, narrowly escaped shipwreck, found the shrimps inferior to those of Minturna, returned sadly to Italy, and held Africa in contempt from that time. Lucullus gave feasts on a scale of inordinate magnificence, expending upon each 50,000 *denarii* (more than $6,000). The annals of the empire are perhaps more remarkable for feats of gastronomy than for military exploits. Galba breakfasted before daybreak at an expense sufficient to enrich 100 families. Vitellius composed a single dish, which cost 1,000 *sestertia* (about $40,000), of the brains of pheasants and peacocks, the tongues of nightingales, and the livers of the most precious fish: he once entertained his brother on 7,000 birds and 2,000 choice fishes; and his culinary expenses for 4 months amounted to about $25,000,000. Domitian at one time summoned the terrified senators in haste by night, to consult them on the manner of cooking a turbot which had just arrived from Ischia. Geta had as many courses at his supper as there were letters in the alphabet. The favorite supper of Heliogabalus was the brains of 600 thrushes. The favorite meat of the later Romans was pork, which held the place of honor on every luxurious table. "Hog in Trojan style," was, according to Macrobius, the masterpiece of the greatest artists. It was inherited from the Greeks, and was named from the circumstance that its interior contained myriads of thrushes, ortolans, and fig-pickers—an image of the armed hosts enclosed in the Trojan horse. The manner of preparing it, long known to few, at length became public. The animal, after being bled under the shoulder, was hung up, and its intestines were drawn out through the throat. These were thoroughly washed, filled with hashed meat and a thick gravy, and were then forced back into the body, which was also stuffed with small game. Half of it was then baked, the other half being covered and protected by a thick paste of barley meal, mixed with wine and oil; and the latter half was afterward boiled in a shallow saucepan. Young pigs were in especial demand, and pork, cooked in numerous styles, was eaten to such an extent that sumptuary laws were enacted limiting its consumption. In the mansions of the wealthier patricians, the kitchens were magnificently furnished with marble floors, pictures, and a profusion of ornaments. The culinary utensils, as gridirons, colanders, and dripping-pans, were of thick bronze plated with fine silver; and the saucepans, of which a great number were required, were of brass or earthenware, or sometimes of silver. Every article of food was served in bronze chafing dishes, "in order," says Seneca, "that no viand should be chilled." Greater extravagance appeared in some of the accessories of the kitchen. Lucullus constructed a park that cost more than a city, and was a marvel of beauty, which contained fish ponds watered by a canal from the sea, the fish in which were flavored by a supply of peculiar food. Varro's aviary for his thrushes, and Nero's *domus aurea*, or banqueting hall, were masterpieces of architecture and luxury. Heliogabalus reclined with his guests on couches covered with cloths of gold, fed his lamps with precious balms, and perfumed the water with costly and exquisite scents. Œlius Varus filled his pillows with fresh leaves of the rose and lily. The tables, too, were sometimes made of the most precious and fragrant wood, and sometimes veneered with gold. The culinary devices of the Romans increased in expense, eccentricity, and coarseness, until the enervated empire fell an easy prey to the hordes of barbarians. During its latter period there were not only schools of cookery, in which accomplished cooks acted as professors, but a profession was also instituted for the purpose of teaching the young patricians "how to masticate." The most curious relic of ancient literature on the subject is the *Deipnosophistæ*, or "Banquet of the Learned," of Athenæus, containing philosophical discussions on the history and quality of nearly every dish known to the Romans.—After the descent of the barbarians southward in the 5th century, cookery, like learning, retired into convents. Though the knights of the round table have no celebrity as valiant trenchermen, the good cheer of the monks and the secular clergy at that period, and in the centuries immediately succeeding, is frequently alluded to in the early European poems and romances. But in the strongly domestic character of the northern matrons were contained the sure germs of a revival of the art. In the 10th century, after the progress of the wine-opposing Saracens in Europe had been checked, refined cookery reappeared in Genoa, Venice, Florence, Milan, and other free cities of Italy, in which great fortunes had been made by commerce. It became more widely cultivated at the period of the renaissance, and flourished with eloquence, poetry, and painting, under the protection of the houses of Este and Medici, of Leo X. and the cardinals. The discovery of America and of the passage to the East Indies around the cape of Good Hope contributed much to its development by enlarging the number of gastronomic productions, and especially by furnishing better seasonings than had before been known. The ancients had made use chiefly of cummin, mint, saffron, garlic, and oxymel; to these were now added cinnamon from Ceylon, vanilla from Mexico, cloves and nutmegs from the Molucca islands, pepper from Java, and allspice from the Caribbees. In the reign of Henry II. the elegant delicacies of Italian cookery were introduced into France by the train of cooks which followed Catharine de' Medici. About the same time several northern cities distinguished themselves by gastronomic specialities; Bayonne, Mentz, and Hamburg, by their hams; Strasbourg, by lard and smoked sausages; Amsterdam, by herrings; Hamburg, by smoked beef; Ostend, by its oysters; Périgueux, by its truffles; and Chartres and Ruffec, by their pies.—Of the elementary races which formed the English nation, the Britons were generally simple in their diet, with no higher culinary attainment than that of bruising their grain in a mortar, though the druids are related to have devoured the remnants of their sanguinary sacrifices; the Saxons were likewise savages in gastronomy, rejoicing in distilled barley and half-cooked game; the Danes were more hospitable, voracious, and bibacious, carousals being almost a part of their religion; but the Normans were the first to introduce into the country any delicate refinements of the art. The chief cook (*magnus coquus*) and his subordinates were officers of high consequence in the train of William the Conqueror. The monasteries of England were soon after famous for their luxuries, and in the reign of Henry II. the friars of St. Swithin complained to the king that the abbot had withdrawn 3 of the 13 courses usually accorded them. Chaucer in his "Canterbury Tales" often mentions the good fare and skilful tastes of the clergy. Strangers were freely entertained in the religious houses and by the secular clergy; and Ralph, being installed abbot of Canterbury in 1309, gave a feast to not less than 6,000 persons. In 1541 Archbishop Cranmer determined to regulate the culinary expenses of the clergy by an edict, and limited the archbishops to 6 dishes of meat (or of fish on fish days), the bishops to 5, and the lower orders to 4 or 3. The number of fowls and fish to be served in a dish was also detailed. The English nobility began to rival even the Romans in expensive entertainments soon after the return of the crusaders, who, during their travels, had been made acquainted with oriental luxuries. Among the choicest dishes of that era was the peacock, which held in the middle ages the rank given to "hog in Trojan style" by the Romans. It was generally served with the feathers of the tail unplucked and spread out to their fullest extent. The tedium of the feasts, protracted for hours, was relieved by martial music, mythological pageantry, the songs of the minstrel, and the jests of the fool. In the reign of Elizabeth the mediæval style of cookery attained its zenith. Cooks were then classical scholars, and the heathen divinities were represented at every festival. When the queen visited the castles of any of her nobility, she was met on the threshold by the penates, and conducted to her apartments by Mercury. The decorations of the table savored of mythology, Ovid's *Metamorphoses* being the favorite subjects of the pastry cook. A German visiting England at that time writes of its people thus: "They are more polite in eating than the French, devouring less bread, but more meat, which they roast to perfection." Shortly after the Elizabethan period, a considerable alteration took place in the domestic economy of the nobility. Early hours and stricter habits were enjoined. Among the rules established for the household of Henry Algernon Percy, earl of Northumberland, the order for breakfast for himself and lady is thus set forth: "Furste, a loif of bread in trenchers, two manchets (rolls), a quart of bore, a quart of wine, two pecys of salte fysche, six baconned (baked) herryngs, or a dish of sproits (sprats)." This was for "fysche dayes," while for "fleshe dayes" the bill of fare was varied by substituting "half a chyne of mutin, ells a chyne of beif boiled," in place of the fish. For the young lords and "my ladye Margaret" a very considerable diminution in quantity was observable. At this time the fork was hardly known in England, and until it came into general use about the middle of the 17th century its place was supplied by the knife, spoon, and fingers.—In France, the Gauls, when first discovered, subsisted chiefly on acorns and roots. Conquered by Cæsar, they speedily acquired the habits of their victors; and the Normans early attained great proficiency in the arts of luxury. Charlemagne introduced many foreign vegetables, and in his reign occurs the first mention of pastry. In 1294 Philip the Fair forbade his subjects to serve at a grand repast more than 2 dishes after the soup, exclusive of cheese. In the latter part of the 14th century flourished the celebrated Taillevant, *chef de cuisine* for Charles V. and VI., from whom we have the recipe for a famous dish of that epoch called *galimafrée:* "Dismember a chicken, and cook it with wine, butter, verjuice, salt, pepper, nutmeg, thyme, laurel, and onions. When sufficiently cooked, add to the gravy some *cameline*, a sauce composed of butter, cinnamon, ginger, allspice, grains of paradise, bread crumbs, and aromatic vinegar." Spices being very expensive at that period, a great consumption was made of them through vanity. In the reign of Louis XII. a company of *sauciers* obtained a monopoly for making sauces; and a company of *rôtisseurs*, for cooking meats in the spit. French cookery was of a sumptuous character in the reign of Louis XIV., and the table of the king rivalled in delicacy that of the great Condé, over which presided Vatel, who in despair at the tardiness of a dish committed suicide, and whose eulogy was written by Mme. de Sévigné. The more accomplished successors of Vatel would hardly allow the delay of a single dish to disturb the harmony of a grand festival. In the reign of Louis XV., especially under the regency, flourished Sabatier, Robert, Laguipierre, and other masters of the art, who introduced salutary improvements. Small supper entertainments, models of delicacy, savor, and elegance, and without superfluous show, came into fashion, and the great houses of Orleans, Conti, and Soubise established what was termed the *petite cuisine*, which is still flourishing. The era of the revolution threatened to abolish with the privileges of the nobles the refinements of cookery, and famed culinary artists found themselves suddenly turned into the street. These now instituted restaurants, which were received with favor by the citizens, and in which the art made progress under the directory and the consulate, till it was revived with new splendor in wealthy houses under the empire. Among the most illustrious recent French cooks are Boucher, Lasnes, Leiter, Delauny, Borel, Véry, Soyer, and above all others, Carême. The last converted the art into a science, made taste yield to chemistry, and the kitchen became instead of a workshop a laboratory. His works on the art of cookery are unrivalled. At present there is no proper school or style of cookery but the French, in which, as in any other art, certain fundamental rules and the exceptions to them are well known and carefully regarded by its practitioners.—The natural elements of food are found throughout the vegetable and animal kingdoms, the mineral kingdom, aside from salt, furnishing only drinks and poisons. The principal processes are boiling, roasting, frying, broiling, and baking. The great object in cooking meats is to retain in them as much as possible of their natural juice. Hence, when boiled they should be plunged at first into boiling water, that their outer part may contract and become impenetrable. On the other hand, the meat for soup should be put into cold water and gradually heated. It has been observed that hard water is better for boiling mutton, and soft water for vegetables. By boiling, mutton loses ⅕ of its weight, and beef ¼; by roasting, they each lose ⅓. Frying, which consists in the application of heat through the medium of boiling fat, is the least healthful of all the operations. Broiling, by which the surface is suddenly browned and hardened and the juices retained, is the most eligible style for those who wish to invigorate themselves by training. Baking renders meat very savory and tender, not only by retaining the juices, but also by not permitting the escape of the fumes; it, however, causes greater retention of the oils, and therefore renders meats less easily digestible. The size and other conditions of a joint or other piece are to be skilfully considered in cooking it. There are 4 principal French sauces, *l'Espagnole*, *la veloutée*, *l'Allemande*, and *la Bechamel*, 2 of them brown and 2 white, forming the basis of almost every other sauce. In the repertoire of a thoroughly educated professional cook are to be found at least 3,500 different dishes, including 500 soups or *potages*, 500 *entrées*, 500 styles of cooking fish, 1,000 dishes each of meats and vegetables, to which are to be added the pastry and fruits. Among national dishes may be reckoned the roast beef, beef steak, and plum-pudding of England, the salt beef of Holland, the *sauer kraut* of Germany, the caviare of Russia, the pilaff of Turkey, the *polenta* and macaroni of Italy, and the *garbanzos* and *olla podrida* of Spain. America abounds in the finest game, vegetables, and cereals, and should either acquire the art in which France has now no rival, or transplant some of her artists.—The celebrated gastronomer De la Reynière gives the recipe for preparing the following dish, which he styles *un rôti sans pareil*, and which is probably as yet the highest achievement of cookery: Stuff a fine large olive with capers and *filets d'anchois;* then place the olive inside the body of a fig-picker, from which you cut the head and feet; then enclose the fig-picker in the body of a plump ortolan, neatly dressed; then insert the ortolan in the body of a fat lark, from which you dissect the principal bones; then cover the lark with a thin slice of lard, and put it into the body of a thrush; which, having in like manner dissected, you stuff inside a fat and juicy quail (a wild one preferred); which you should cover with a vine leaf and insert in the body of a lapwing; which is boned and trussed, and inserted in the body of a golden plover; which in its turn is covered with lard and enclosed in a young woodcock; having rolled this in grated bread crumbs, place it in the body of a neatly prepared teal; which put into the body of a guinea hen; which secrete in the body of a young wild duck; which encage in the body of a chicken; which conceal inside of a young and carefully selected pheasant; which entomb in the body of a young and fat goose (wild, of course); which insert in the body of a very fine hen turkey; which finally enclose in the body of an *outarde* (a species of wild turkey) or a young swan, and fill the interstices with Lucca chestnuts, forced meat, and a savory stuffing. Having thus prepared the roast, put it into a pot sufficiently large, with onions, cloves, carrots, chopped ham, celery, a bouquet of parsley and thyme, mignonnette, several slices of salt pork well salted, pepper, salt, fine spices, coriander seeds, and one or two sprigs of garlic. Then seal this pot hermetically with a strip of paste or clay, place it on a slow fire where the heat will penetrate it gradually, and let it remain 24 hours. Then uncover it, skim it if necessary, and serve on a hot dish. The juices of so many different fowls amalgamated thoroughly by this slow process, and their different principles becoming so identified with each other by this close connection, give to this unequalled dish a most wonderful flavor, in which are combined the quintessence of the poultry yard, the marsh, the plain, and the forest.—An acquaintance with the arts of cookery may be obtained from the cookery books, which abound throughout the civilized world. The oldest of these in modern times that has been preserved dates from the second half of the 14th century; it is entitled *Le ménagier de Paris*, and was written by a citizen of that city, surnamed Le Sage, for the instruction of his wife. Moral counsels are mingled in it with very full and curious culinary details. Another book by Taillevant, royal cook of France, dates from about 1392, and passed through 8 editions between 1480 and 1602. An excellent Italian treatise on cookery by Bartolommeo Scappi, chief cook of Pope Pius V., was published in 1570. The contents of these works prove that the art was at that time a learned and complicated one. Among the numerous cookery books which are in use and authority at the present time are Rumohr's edition of König's *Geist der Kochkunst* (Stuttgart, 1832); Otto's *Praktische Anleitung zur Kochkunst* (Leipsic, 1842); Carême's *Art de la cuisine Française au XIX. siècle*; also his *Pâtissier pittoresque* and *Cuisinier Parisien* (Paris, 1854); Plumerey's *Entrées chaudes* (Paris, 1854); the *Dictionnaire général de la cuisine Française*; the "Cook, or Ladies' Kitchen Directory" (London); "Cookery and Domestic Economy" (Edinburgh); Kitchiner's "Cook's Oracle;" the "Housekeepers' Receipt Book," by Miss Catharine E. Beecher (New York, 1845); Miss Leslie's "New Cookery Book" (Philadelphia, 1857); the "Modern Cook; a Practical Guide to the Culinary Art in all its Branches," by C. E. Francatelli, pupil of Carême, and late *maître d'hôtel* to the queen of England, republished with additions, at Philadelphia, 1858; and the "Modern Housewife," translated from the French of Alexis Soyer, New York, 1859. Other works in illustration of the subject are the *De Honesta Voluptate et Valetudine*, by the Italian ecclesiastic Platina (1478); the *Almanach des gourmands*, by Grimod de la Reynière (8 vols., Paris, 1803–'12); and the brilliant and amusing *Physiologie du goût*, by Brillat-Savarin (Paris, 1825).

COOKMAN, GEORGE G., a Methodist preacher, born in Kingston-upon-Hull, Yorkshire, England, in 1800, perished at sea in 1841. In 1821 he visited the United States on business, and here received the impression that it was his duty to preach the gospel. Having obtained a license to preach, he entered upon the work. In 1825 he went to Philadelphia, and at the ensuing session of the Philadelphia conference was admitted into the travelling connection. In 1833 he was transferred to the Baltimore conference, and was twice elected chaplain to congress. He embarked for England, at New York (March 11, 1841), on the steamship President, which was lost at sea. His style of pulpit oratory was nervous and elegant, and wherever he went large crowds were attracted to his ministry.

COOK'S ISLANDS, a group of islands in the Pacific ocean, lying S. of Polynesia, between the archipelago of Tonga on the W. and Tahiti on the E. The largest are Mangeia, Atiou, Harvey, and Raratonga. They are inhabited by people of the Malay race, among whom the English missionaries have made many converts to Christianity. Pop. estimated at 50,000.

COOLEY, WILLIAM DESBOROUGH, an English geographer, best known by his writings on Central Africa. He has contributed largely to several prominent reviews and cyclopædias, and is the author of "Inner Africa Laid Open," "Ptolemy and the Nile," and the "Negroland of the Arabs." Among his unfinished works are a treatise on the true conception of physical geography, and a dictionary and grammar of the tongues of eastern and southern Africa. In 1858 he received from the crown a pension of £100 a year.

COOLY (Hindostanee, day laborer), a term applied by Europeans to the class of day laborers in all eastern countries. Thus Kämpfer, a century and a half ago, used it in his work on Japan, spelling it Kuli, to designate the Japanese laborers employed in the lading and unlading of the Dutch ships at Nagasaki. The Europeans of to-day at Canton use it also to designate the Chinese laborers employed about their factories. The term has recently been made familiar in Europe and America by the efforts to obtain eastern laborers known by the general name of coolies, for the purpose of tropical cultivation and labor. This cooly emigration, so called, embraces two operations of a very different character, often, however, confounded with each other, viz.: the emigration of coolies from India, and the emigration of coolies from China. I. The first attempt at the employment of Indian coolies appears to have been made in the colony of British Guiana, on the N. E. coast of South America, in 1839, shortly after the full emancipation of the slaves, which took place in 1838. A ship load of coolies was obtained at Calcutta, brought to the colony, and placed on a plantation. This experiment was not successful; owing to a want of proper care and oversight, the coolies became infested with the chigo, an insect that burrows under the skin of the feet, and lays eggs, which if not extracted produce other chigos, which again lay eggs, resulting in ulcers, which with neglect spread more and more, so as finally to make amputation necessary. This led to a removal of these coolies to the colony hospital, and public investigation of their case, which caused a great excitement in England, and to the interference of the British Indian government to stop the emigration of coolies. The urgent solicitations of the planters of British Guiana, Trinidad, and the Mauritius obtained an order in council, dated Jan. 15, 1842, by which the emigration of Indian coolies was allowed under certain strict regulations, including the appointment of emigration agents in India, whose duty it was to see that the emigrants fully understood where they were going, and on what terms; and of emigration agents also in the colonies to look after their welfare and rights after their arrival, and to see that they were not maltreated or imposed upon. The vessels that carried them were also placed under strict control as to number of passengers, provisions, &c. The contract into which the coolies entered before embarking, required them to remain in the colony to which they went for 5 years, at the end of which time they were to be entitled to a free passage home at the expense of the colony. They were to be paid monthly wages of $4 a month, were to receive 2 suits of clothes annually, medical attendance, and a generous allowance of food, together with an outfit of clothes before starting, and an advance of 2 months' wages; the latter to be repaid at the rate of $1 a month as their wages became due. The passage money was advanced by way of bounty out of the colonial treasury, though sometimes required to be reimbursed by the planters by whom they were employed. Though bound to serve 5 years, the coolies were not generally required to enter into contracts of labor with any one planter for more than a year. Under these or similar arrangements, considerable numbers of Indian coolies have been carried to British Guiana and Trinidad; but the emigration has been largest and most successful to the island of Mauritius, whose proximity to India rendered the passage cheap and less an object of dread. The following table will show the progress of this latter emigration:

Years.	No. of Coolies, Jan. 1		[illegible]
	Males.	Females.	
1843	15,145	[illegible]	[illegible]
1844	44,654	3,467	[illegible]
1850	51,240	12,573	[illegible]
1855	96,143	25,181	[illegible]
1856	100,741	27,345	13,114
1857	102,921	31,466	[illegible]

In the eagerness of the planters to obtain emigrants when the business commenced, they suffered themselves to be a good deal imposed upon by the parties employed in the collection of emigrants, who occasionally sent them the refuse of the cities instead of persons accustomed to agricultural labor. The former class turned beggars and vagabonds, and caused a good deal of annoyance and trouble. Those accustomed to agricultural labor proved useful, though their strength and power of work were by no means equal to those of the negroes. At present the cooly population of Mauritius exceeds that of all other classes. The cultivation of sugar has fallen almost entirely into their hands, the negroes, who still regard plantation labor as degrading, finding employment in cultivating provisions and otherwise. Of those whose terms of service expire, a portion return to India, carrying with them their accumulated earnings, which at home make them rich. Several ship loads of returned coolies have also been sent back from British Guiana and Trinidad. Others reëngage themselves for a new term of years; and with the increase of the female emigration, the disposition increases to become permanent residents, especially in the Mauritius. They sometimes, though rarely, intermarry with the blacks. The neighboring French island of Réunion (formerly Bourbon) has also shared to a certain extent in this Indian cooly emigration. It was dissatisfaction at the strict regulations of the English, which stood in the way, as the French planters thought, of their obtaining all the laborers they wanted, that led in 1857–'8 to the enterprise of procuring on the coast of Africa emigrants by purchase. Under the joint impulse of cooly labor and the use of guano, the sugar production of Mauritius has greatly increased. In the last year of slavery, with a slave population of 70,000, the product of sugar did not exceed 28,000 tons. By 1851 it had risen to 55,000 tons, and in 1856 reached 118,000 tons. II. The second branch of cooly emigration, that from China, being wholly destitute of any government superintendence as to the embarkation of the emigrants, and the protection afforded to them after their arrival at their ports of destination being little more than nominal, is of a very different character from the cooly emigration from India, and has been attended with great abuses. This transportation of Chinese coolies, to be sold, or hired out as laborers, bound to serve for a term of years to pay their passage, is not to be confounded with the voluntary emigration of Chinese to California and Australia, which commenced about the same time. In those cases the emigrants pay their own passage money, and on arriving at their ports of destination, are free to seek their own fortunes. The principal points to which the indentured Chinese laborers have been sent, are Peru, including the Chincha islands, and Cuba. The whole business of procuring the emigrants is in the hands of the agents of the ship-owners, who undertake to supply the laborers generally on contract with the government or private parties of the importing country. They employ Chinese contractors, who go into the villages and bargain with the mandarins, to whom they pay a dollar or two the head for the emigrants obtained. These agents visit the opium houses and gambling houses, and find out men who are in debt, bargain with them to go, and advance them a little money. They are then brought to the port of shipment and kept prisoners on some dirty old junk, till a ship appears to take them. Printed handbills, in Chinese, are scattered about, in which it is represented that the emigrants are to be employed as domestic servants, or in the manufacture of cigars, or other light work, for a term of 7 years, the employer to pay them $48 a year, and to furnish them with shoes and clothes. They have in general no idea of the length of the voyage, or of the country to which they are going. Many of them soon become homesick, and some commit suicide, even before embarkation. Being inadequately clad, and closely packed in vessels without ventilation, a large number die on the passage. The survivors, on their arrival, are sold to the highest bidder for a nominal term of 7 years; producing in some cases as much as $280 a head, their highest cost on board being $15. Once sold to the planters, they are treated as slaves. At the end of the 7 years of their service, they find themselves brought in debt to the plantations, and compelled to engage again, being thus in fact subjected to perpetual slavery, without the protection which the Spanish law affords to slaves. The cruelty of this traffic soon attracted notice both in China and elsewhere. In 1855 the "scholars and merchants of Amoy" issued a proclamation "for the purpose of counteracting the artifices of hardened miscreants who impose on the people and seduce them to their destruction." A similar Chinese document was circulated about the same time at Canton. The imperial government prohibited the traffic under severe penalties. The English authorities in China refused to countenance or allow it. An act of parliament passed in 1855 confiscated British ships and all others without certain prescribed papers engaged in this traffic and found within British jurisdiction. Thus excluded from the consular ports, the cooly trade concentrated at Swatow, a smuggling port about 250 m. up the coast from Hong Kong. The whole amount of tonnage from that port in 1855 was, according to Dr. Parker, the American commissioner to China, 12,164 tons, of which 6,592 tons were American, and the remainder British, Chilian, and Peruvian. In consequence of representations made by Dr. Parker, he was instructed publicly to discountenance this traffic, which he did in a notification issued Jan. 1, 1856, declaring it unsanctioned by the treaty with China and illegal. The Peruvian government, satisfied of the iniquities and cruelties attendant upon this cooly trade, issued a decree, March 5, 1856, by which, after 4 months, the introduction of Asiatic laborers by contract, "in the violent and cruel manner hitherto prevalent," was prohibited. Captains and mates bringing such laborers were required to certify that they had embarked of their own free will, and if they certified falsely, or overcrowded their vessels, were to be subject to trial and damages. The emigrants were also to be perfectly free and at liberty to choose their own employers. In Cuba nothing seems to have been done to restrict this traffic, and English and American vessels are constantly arriving there with coolies, and generally after a great mortality occasioned by overcrowding the vessels. Many of the American clipper ships despatched to San Francisco, are said previous to their departure to enter into contracts to transport coolies from China to Cuba at $70 the head.

COOMANS. I. Jean Baptiste Nicolas, a Belgian author, born in Brussels in 1818, edited from 1838 to 1841 the *Journal des Flandres*, from 1841 to 1845 the *Journal de Bruxelles*, and the *Courrier d'Anvers* from 1845 to 1848, when, on his election as member of the Belgian house of representatives, he resumed his editorial connection with the *Journal de Bruxelles*. He wrote several essays on politico-economical subjects, and among his historical works are *Les communes Belges* and *Richilde*. His *Histoire de la Belgique*, which he wrote both in Flemish and in French, appeared in 1836, illustrated with 52 plates. II. Pierre Olivier Joseph, a painter, brother of the preceding, born in Brussels, July 28, 1816, spent several years in Algeria, and visited the desert of Sahara. On his return, he produced pictures of African scenery, of the emigration of Arab tribes, and of Algerine *danseuses*. He also executed several battle-pieces and historical tableaux, as the battle of Ascalon, the taking of Jerusalem, and Attila at the battle of Châlons-sur-Marne.

COOMASSIE, capital of the kingdom of Ashantee in Western Africa. See Ashantee.

COOMBE, William, an English writer of some note, born at Bristol in 1741, died in 1823. In early life he inherited a considerable fortune, which he soon squandered, and was in consequence compelled to earn a livelihood by his pen. Among his works, all published anonymously, may be mentioned the "Diaboliad," the "Devil upon Two Sticks in England," the "Tour of Dr. Syntax in search of the Picturesque," and the "History of Johnny Quæ Genus."

COOMTA, Combta, or Compta, a town of the Madras presidency, British India, in the British district of North Canara, on the Malabar coast, 118 m. N. W. from Bangalore. It is situated on a cove or creek about 1 m. from the coast, where there is a roadstead, protected by a headland from the N. W. wind which prevails during the trading season. It was anciently a place of note; it was twice burned by Tippoo Sahib's army, and of late years it has made great advances in consequence of its selection as a port of shipment for cotton produced in Bellary and the S. Mahratta country.

COOPER, a central co. of Mo., bounded N. by Missouri river, and intersected by the Lamine, which is navigable from its mouth to the Blackwater; area, 558 sq. m.; pop. in 1856, 15,082, of whom 3,761 were slaves. The surface is hilly or moderately undulating, and occupied in some places by prairies. Its rich and productive soil requires but little labor for cultivation, and its mineral wealth is said to be inexhaustible. Mines of bituminous and cannel coal are worked with profit in various quarters; iron and lead ores are extracted from veins near the Lamine; there are several quarries of marble and hydraulic limestone; and from the vicinity of Moniteau creek is obtained a species of sand used in the manufacture of flint glass, and especially valuable on account of its rarity. The productions in 1850 were 997,870 bushels of Indian corn, 92,662 of wheat, 123,840 of oats, 3,800 tons of hay, 127,800 lbs. of tobacco, and 171,879 of butter. There were 9 churches, and 460 pupils attending public schools. The county was named in honor of Col. Cooper, one of its earliest settlers. Capital, Booneville.

COOPER, a river of South Carolina, rises in Charleston district, and uniting with the Ashley below Charleston, forms the harbor of that city. A canal 21 m. long connects it with the Santee.

COOPER, Anthony Ashley, first earl of Shaftesbury, born July 22, 1621, died Jan. 21, 1683. His family was old and wealthy, and he was born at Wimborne, St. Giles, Dorset, his mother being Anne Ashley, of that place, daughter of Sir Anthony Ashley, who was one of Elizabeth's ministers. His father was Sir John Cooper, of Rockbourne, Hants. Left an orphan at 10 years, and inheriting the fortunes of both families, he was one of the richest commoners in England. After studying at Oxford he entered Lincoln's Inn, and at 18 married a daughter of Lord Keeper Coventry. He represented Tewkesbury in the short parliament of 1640, but was not a member of the long parliament. An active royalist, he did good service for Charles I. in the early part of the civil war, but thinking himself ill treated he went over to the parliament in 1644. He was appointed on the committee for governing the army, and he greatly distinguished himself in the field. Leaving the army, he became high sheriff of Wilts in 1646, and in 1651 was one of the commission for reforming the law. Cromwell at first patronized him, but as Cooper failed to get the great seal, they fell out. He was a member of all Cromwell's parliaments, sitting for Wilts. He refused to enter the council of state, and his opposition was very annoying. He was a member of Richard Cromwell's parliament, and took no inconsiderable part in the work of overthrowing the second protectorate. He now became a royalist, and on the reassembling of the long parliament was elected a member of it, and from his position there he guided that movement which ended in the restoration of Charles II. Appointed a member of the council of state, and chosen to the convention parliament, he was put on the commission that waited on Charles at Breda. He was rewarded by appointment to several offices, including that of chancellor of the exchequer, and made lord Ashley. His participation in the trials of the regicides has left a stain even on his memory. He was not conspicuous for some years, and on some occasions acted patriotically and liberally. In private life he was very licentious. He was made first commissioner of the treasury in 1667, and was the ablest of the enemies of Clarendon. His name furnished the second letter for the word Cabal, given to the Clifford ministry, and it is supposed he originated the scheme of shutting up the exchequer. Created earl of Shaftesbury in 1672, the same year saw him made lord chancellor. He had no legal knowledge, and was the worst chancellor England ever had, and distinguished only for his ignorance of his duties and his servility to the king. Suddenly he changed his course, and began to oppose the government of which he was a member, acting against the declaration of indulgence. He supported the test act, but failing to monopolize power, he carried his opposition to such an extent that the king dismissed him. He was now a patriot and leader of the opposition. For some years his life was very brilliant and very violent, and in 1677 he was committed to the tower, where he remained above a year, and was not released until he had begged pardon on his knees, and admitted his errors. He was now sunk very low, but his unscrupulous use of Oates's "popish plot" soon made him the most powerful English statesman. He was not the inventor of that plot, but he turned it to the fullest possible account, and led the Protestant party. His was the test bill under which Catholics were excluded from parliament 151 years. The innocent blood that was shed in torrents should be on his head. In the new parliament he carried through the impeachment of Danby. He was made president of the new permanent council which Sir William Temple had invented, which rendered him nominal chief of the government; but, aware of the instability of his condition, he determined that the duke of York should be excluded from succession to the throne, and hoped to make the duke of Monmouth Charles's successor. He lived in London, where the Protestants were supreme, and was pleased to be called Alderman Shaftesbury. In 1679 he framed and caused to be passed the *habeas corpus* act, which renders that year a most important era in the history of constitutional liberty. The parliament was dissolved, and Shaftesbury dismissed from office. He became more violent than ever, and induced Monmouth to return home. He prosecuted the duke of York as a popish recusant. The parliament of 1680 was, so far as the commons were concerned, completely under his influence, and he carried resolutions against the duke of York, and caused the exclusion bill to be again brought forward, which rapidly passed the lower house, but was thrown out by the lords. Shaftesbury continued his factious course under patriotic pretences, and the king again dissolved parliament. The next parliament met at Oxford, and Shaftesbury being still all-powerful in the commons, it was soon dissolved, and the royal triumph was complete. The earl was arrested on the charge of high treason. He is said to have offered to expatriate himself, and to pass his life in Carolina, for which John Locke, at his request, had framed a constitution; but the offer was not accepted. The same injustice with which he had treated the Catholics he now experienced. The benefit of his own *habeas corpus* act was denied him, and so were various other legal privileges. He was assailed in pamphlets, and by Dryden in his "Absalom and Achitophel," who, however, was not original in applying the Hebrew politician's name to Shaftesbury. The grand jury threw out the bill, and the earl, after some delay, was liberated, residing in and near London. These places soon became unsafe for him, the tory reaction having made the king despotic. He continued to plot, after finding that he could not obtain justice, and was forced to disguise himself and to frequently change his abode. Finally he left England, though not without difficulty, and reached Amsterdam, 1682. He asked to be admitted to the magistracy of that powerful city, and his request was favorably received. This secured his personal safety, and for the brief remainder of his life he lived in great splendor, and received many evidences of regard; but the gout, an old complaint, returned, and he died in his 62d year. He was a man of fine wit, but his talents as a statesman have always been much overrated, though probably Lord Campbell is correct in saying he is the first Englishman who can be called a great parliamentary debater.—ANTHONY ASHLEY, 3d earl of Shaftesbury, and grandson of the preceding, born in London in 1671, died at Naples, Feb. 15, 1713. After receiving a thorough education, and travelling on the continent, he entered parliament for Poole in 1693, where he made his famous speech in behalf of the proposal to allow counsel to persons charged with high treason. Illness compelled him to retire from public life in 1698, and he passed some time in Holland under an assumed name, continuing his studies, and associating with learned men. Returning to England, he became earl of Shaftesbury, and entered the house of lords, 1700–'1, where he supported the measures of William III., who offered him the office of secretary of state, but his impaired health would not allow him to accept it. On that king's death he again returned to private life, residing in England or Holland. In 1711 he went to Naples, where he died. He was a man of great benevolence, and wrote in behalf of humane measures. Macaulay says that he "gave himself up to mere intellectual luxury, lost himself in the mazes of the old academic philosophy, and aspired to the glory of reviving the old academic eloquence;" that he had not merely disciples but worshippers; and that "he lived long enough to become the founder of a new sect of English free thinkers, diametrically opposed in opinions and feelings to that sect of free thinkers of which Hobbes was the oracle. During many years the 'Characteristics' continued to be the gospel of romantic and sentimental unbelievers, while the gospel of cold-blooded and hard-headed unbelievers was the 'Leviathan.'" His first publication was "A Letter on Enthusiasm" (1708), suggested by the extravagance of the French prophets; this was followed by the "Moralists" and *Sensus Communis* (1709), and "A Soliloquy, or Advice to Authors" (1710). A complete collection of his works, entitled "Characteristics of Men, Manners, Opinions, and Times," was published after his death (3 vols. 1716). At his death he was engaged on a work on the arts of design, which he well understood.

COOPER, SIR ASTLEY, an English surgeon, born Aug. 23, 1768, at Brooke in Norfolk, died in London, Feb. 12, 1841. He was the 4th son of the Rev. Samuel Cooper, curate of Brooke; his mother belonged to the Paston family, whence he sometimes took the name of Sir Astley Paston Cooper. His father gave him his first lessons in the classics, but the youth was inclined to active life and dissipation, and averse to study. Frank and good-natured, he was reckless and fearless, and fond of riding vicious horses without saddle or bridle. On one occasion, while a boy, he broke his collarbone in attempting to jump on the back of a donkey over the body of a cow, which lay between them chewing the cud. "Cool courage" was his chief characteristic as a boy, and on one occasion served him well in great emergency. One of his foster brothers fell from a heavy wagon, the wheels of which ran over his body, tearing the flesh of the thigh, and injuring the femoral artery, from which the blood was issuing abundantly. The neighbors were much alarmed, not knowing what to do to stop the bleeding till a surgeon could be called; young Astley Cooper came among the crowd, saw the blood flowing from the wound, and though but little more than 12 years of age, took out his pocket handkerchief and tied it tightly around the thigh, above the wound, and thus arrested the alarming flow of blood. This first exploit, and probably the praise which it elicited, awakened in his mind, he used to say, the love of surgery as a profession. In 1781 his father was presented with a living at Great Yarmouth, and shortly afterward his uncle, William Cooper, then senior surgeon of Guy's hospital in London, paid a visit to the rectory, heard of the surgical exploit of young Astley, and encouraged him in his inclination for the medical profession. He was sent to London in 1784 to study under direction of his uncle, who however soon committed him to the care of Mr. H. Cline, surgeon of St. Thomas's hospital. He now became more studious. Cline inspired him not only with a love of his profession, but also with a love of liberal ideas in politics. From that time forward Cooper was transformed from a reckless and ungovernable youth into an indefatigable student and an enthusiastic republican. During the first year of his studies under Cline, he applied himself so diligently to dissection that in the beginning of the second year he stood at the head of the class of anatomy. He then applied himself with equal diligence to surgery, taking notes of all his observations, and showing great sagacity in examining the diseases of patients in the hospital. At the age of 17 he was admitted as a member of the physical society, which was at that time the oldest medical society in London. During the vacation he returned to Yarmouth, but instead of devoting himself as usual to field sports and country pleasures, he spent his time with Mr. Francis Turner, a surgeon apothecary of Yarmouth, in the study of practical pharmacy; but it does not seem that he continued to pay much attention to this branch of medical science, as he was always deemed in after life somewhat deficient in a knowledge of medicine, although he gained the highest rank in surgery. In 1787 he went to Edinburgh to study under Dr. Gregory and Dr. Cullen. He also attended the lectures of Dugald Stewart on mental philosophy; in this, however, he made little progress, his mind being, as he himself observed, unsuited to the study of metaphysics. On returning to London, he was appointed demonstrator of anatomy at St. Thomas's hospital; and he became so popular among the students, that in 1791 Cline proposed to associate him with himself in giving lectures on anatomy, and offered him a salary of $600 per annum, to be increased every year. Cooper accepted. It was the custom at that time in England to teach anatomy and surgery together, but when Cooper became assistant lecturer to Cline, he proposed to teach them in separate classes. The innovation was at first resisted, but in 1792 Cline consented, reserving to himself the chair of anatomy, and giving that of surgery to Cooper. The lectures were delivered every evening at St. Thomas's hospital, and the young professor displayed much energy and zeal in the performance of his duties. Soon after this appointment, he married a young lady who was related to his friend Cline, and who had a fortune of $70,000; but so great was his scientific zeal that even on the day of his marriage he gave his lecture in the evening as usual. The first vacation after his marriage Cooper went to Paris with his wife, intending to remain some time, and witness the operations of the best surgeons there; but the time was unfavorable. The revolution was then raging with much violence, and after witnessing the assault made on the Tuileries on Aug. 10, Cooper and his wife became alarmed, and after experiencing some difficulty in obtaining passports, they returned to England in September. He never afterward liked to converse on revolutionary topics; and the excesses which he witnessed on that occasion seem to have chilled his former enthusiasm for republicanism. He saw Chopart and Desault, the two great surgeons of that day in Paris, and expressed some admiration for the latter, who was a bold and intelligent innovator in the art of surgery. The celebrated John Hunter, in London, had commenced a revolution in the principles and practice of surgery in England, and Astley Cooper, admiring his views, attempted to explain them to the students at St. Thomas's hospital; but not possessing the requisite powers of generalization, he failed to interest his auditors, and was obliged to resume his own more practical method, in which he most excelled. By confining himself to surgical pathology and operative medicine, he soon became one of the most popular professors in the capital. In 1798 he wrote two papers of minor importance in the "Medical Records and Researches," published by a society formed in St. Thomas's hospital. In 1800 his uncle William resigned his place of surgeon in Guy's hospital, and Astley obtained the post with some difficulty. From that time forward he commenced a series of very remarkable observations and surgical operations. In 1801 he demonstrated that the destruction of the membrane of the tympanum does not destroy the sense of hearing, and therefore he inferred that this membrane might be perforated with impunity in performing certain operations for the cure of deafness. In 1804 he published his great work on inguinal hernia, which was completed in 1807 by another work on crural and umbilical hernia. He had been himself affected by inguinal hernia at the age of 12, and during 6 years wore a bandage. This fact had no doubt called his attention more particularly to hernia, and the fittest modes of treatment. In 1806 he put a ligature on the carotid artery, and was the first surgeon who attempted that operation. He published 2 cases in which he had operated. In 1811 he modified the mode of treatment in cases of *spina bifida*. In 1813 he succeeded in 2 cases out of 3 in extracting stone from the bladder without the operation of cutting. At that time he was perhaps the most popular surgeon in London, and his private practice was very extensive. He accepted, nevertheless, the professorship of comparative anatomy at the royal college of surgeons, and devoted a part of his nights to preparing lectures and dissections, in lieu of taking rest and sleep to restore his bodily powers. In a short time his health gave way, and he was obliged to discontinue his excessive labors, and confine himself to practical surgery. In 1817 he put a ligature on the aorta, the boldest thing that ever was attempted in surgery. In 1818 he published, in coöperation with one of his pupils, Mr. B. Travers, the first volume of his surgical essays, soon followed by a second, in which he gives his first observations on luxations. His popularity and reputation increased rapidly among all classes of society. In 1820 he was consulted by King George IV., and in 1821 he removed a tumor from the king's head, for which he received a fee of $2,500, and the title of baronet. In 1822 appeared his remarkable treatise on "Articular Fractures and Luxations." In 1824 he was named "sergeant surgeon" to the king. At this time he was 56 years of age, and his incessant labors had brought on symptoms of premature old age. Attacks of vertigo became more frequent, his breathing much oppressed, and the pulse both slow and intermittent. In 1825, he discontinued his lectures and resigned the office of surgeon to Guy's hospital. His love of occupation and his increasing private practice, however, still kept his mind engaged. His health began to fail, and the death of his wife in 1827 giving it an additional blow, he was compelled to retire into the country. He committed his patients to the care of his nephew; but in the following year his health had so much improved, and the quiet of the country became so oppressive to his active mind, that he returned to London and resumed his private practice. His labors were continued with his usual zeal and application. In 1829 he published his "Illustrations of the Diseases of the Breast;" in 1830, his "Treatise on the Structure and Diseases of the Testicle;" in 1832, his "Anatomy of the Thymus Gland;" and various observations in the "Guy's Hospital Reports." In 1839 he published his "Anatomy of the Mammary Glands;" and death overtook him two years afterward, while laboring to complete his work on the diseases of the breast, by a description of cancerous affections. During the latter years of his life he had experienced frequent attacks of gout, and finding his respiration much obstructed, he judged that he was suffering from an affection of the heart that would soon end his days. He would not, however, retire from practice, but resolved, as he said, "to die in harness." He died in his arm chair surrounded by friends, and two minutes before expiring he uttered the words: "God bless you; adieu to you all." Sir Astley Cooper was probably the most popular and successful surgeon of his age. In 1813, it is said, he deposited with his banker £21,000, the product of one year's practice. It is also stated that he gave to poor relations between £2,000 and £3,000 annually during the most prosperous period of his career, and in his will he left £100 a year to be given every third year to the best essay on some surgical subject. Although he lived expensively, almost keeping open house in London for his friends, he left a fortune estimated at £500,000. He was buried at his own request beneath the chapel of Guy's hospital. A colossal statue by Bailey has been dedicated to his memory in St. Paul's cathedral.—His nephew, Bransby Blake Cooper, Esq., F. R. S., is the author of the "Life of Sir Astley Cooper, Bart., interspersed with Sketches from his Note Book, &c." (2 vols. London, 1848).

COOPER, James Fenimore, an American novelist, born in Burlington, N. J., Sept. 15, 1789, died at Cooperstown, N. Y., Sept. 14, 1851. He was the youngest of the 5 sons, and youngest but one of 7 children, of Judge William Cooper. In his first year, he was removed with the family to Cooperstown, where, several years previously, his father had become possessed of large tracts of land by the extinguishment of Indian titles, on the shores of Lake Otsego, the head waters of the Susquehanna river, and nearly in the geographical centre of the state of New York. In this unbroken wilderness, far remote from any civilized settlements capable of affording protection, the enterprising pioneer began a career of great success and influence, by erecting the imposing hall which figures so prominently in the romances, and subsequently became the final resting place, of his son, on the southern shore of the beautiful lake. Judge Cooper was not only a man of remarkable energy and business skill, as his adventurous encounter of the toils and perils of frontier life at such a time would indicate, but possessed a strength and sagacity of mind, which, added to the great wealth accruing from the rapid settlement of the country at the close of the revolutionary war, gave him and his family a kind and degree of influence, for many years unequalled in all that region, and which reacted visibly, and not altogether happily, upon the character and tastes of the family. Traces of the independence, not to say hauteur, engendered by the sunshine of such position and influence, are to be detected in many passages both of the history and the writings of the subject of this notice, and which perhaps contributed to the personal troubles and collisions of his later years. Mrs. Cooper, his mother, whom in personal aspect, as well as in mental and moral traits, Mr. Cooper greatly resembled, was the daughter of Richard Fenimore of New Jersey, a family of Swedish descent, and great personal excellence and social distinction. She, too, like her husband, possessed remarkable energy of character, and a cultivated and commanding intellect, and is remembered to have been fond of romance reading. Her immaculate housekeeping, personal beauty, and family consequence, made her to a memorable degree a sharer in the influence of her husband, both in the household and in the community. In the midst of the wild scenes, rude experiences, and exciting incidents of a frontier life, tinged with these strong domestic influences, passed the youth of Mr. Cooper, until at the age of 13 he was first sent from home to be entered in the freshman class of Yale college. The youngest pupil in the institution, and by far too young to reap the benefits or to escape the perils of college life, he seems to have given no indications of his future eminence. The college soon ceased to be sufficiently attractive to detain him, and at the close of his 3d year he voluntarily left it, and entered the U. S. navy, first as common sailor, in which capacity he remained nearly two years, chiefly on board the Sterling, when he was promoted, first to the rank of midshipman, and before the close of his sea life to that of lieutenant, partly with the sloop-of-war Wasp, and afterward for a time on lake Ontario. That the experiences of this naval life had a powerful influence, if not in determining his career, at least in preparing him for it, is obvious from the perfect familiarity with sea life which his nautical tales everywhere display. He was married, Jan. 1, 1811, to Miss Susan De Lancey, sister of the bishop of the western diocese of New York, a lady whose great excellence of character, cultivated tastes, and unaffected piety, laid the foundation of an uninterruptedly happy and refined domestic life, which visibly affected and ennobled the character of the husband. During this year he resigned his post as lieutenant, and removed to Mamaroneck, Westchester co., N. Y., and was there residing when a few years subsequently he began his career as author. It is narrated that while reading aloud to his wife a newly published English novel of domestic life, and yawning over its insipid pages, he exclaimed that he could write a better novel himself. The quick reply, "You had better try," like many another casual seed dropped at the right time into prepared soil, begot the determination to make the attempt. A few weeks of secret labor astonished the wife with the opening chapters of "Precaution." The style, scenery, and spirit of the book readily betray its origin, and when completed it gave but little satisfaction to the author, or pleasure to the reader. It was, however, deemed by partial friends, who listened to its successive chapters as they were produced, worthy of publication; and mainly through the intervention of Mr. Charles Wilkes, a literary friend on whose judgment he much relied, it was published in two volumes, in 1819, at the author's own expense. Though not inferior to the average novels of the time, it was so imitative as to have passed for a long time as a work of English origin. It was not acknowledged by the author for many years, and was never, with his approval, included among his works. But it did the great service of awakening to consciousness the real powers of the man. The resolution to write another work of fiction was soon formed, and every thing favored the choice of the fortunate theme. The country was emerging from the war with Great Britain, and the public tastes and associations naturally pointed to the still more stirring experiences of our revolutionary era as a popular subject of delineation. Casting aside all models, he ventured upon the wholly untrodden ground of a domestic tale abounding in characters familiar to all, and depending for its interest upon scenes in which a large part of the living generation had actually participated. It was one of those bold ventures which genius alone could conceive or successfully carry through. The composition of the work was kept secret until near its completion, when again the enthusiasm of listening friends induced the author to undertake its publication. For a long time no publisher could be procured, and when at last the mingled sagacity and friendship of Mr. Charles Wiley came to the rescue, it was only at the author's expense, and by his personal supervision of the proof sheets, and sometimes actual participation in the type-setting, that the first volume was made ready for publication. It here came almost to a standstill. Whether from want of confidence in its success, or want of means, the author was strongly disposed to abandon it entirely. He would gladly have given the copyright to any publisher who would complete it at his own expense, but could find no one to accept it. Thus, though commenced soon after the appearance of "Precaution," it was 3 years before the "Spy" was issued. It had, as it deserved, an immediate success. The novelty of its subject, the originality of every feature, the exciting and familiar scenes, the well-known characters hardly disguised by the thin veil of fiction, the pungent incense to national pride and patriotic feeling, and withal the rough vigor and manly quality of the style, were well fitted to the popular habits and tastes. At home it was cordially though cautiously praised by the critical few, but eagerly devoured by the uncritical many, until the seal of its fame was set in England by a popularity rivalling even that of the Waverley novels, then at the very zenith of their success. It ran rapidly through many editions in both countries, and soon spread to the continent and over Europe, with a sale which has scarcely declined to the present day: and it has probably been honored with a greater number of translations and attracted a more universal admiration than any similar work ever written in English. A few years before his death, Mr. Cooper had information of its translation into Persian, having before this been reproduced in Arabic, and we believe some other oriental languages. The success of the work necessarily determined the author's future. From this point, he abandoned his profession and gave himself to authorship through a long life, with a diligence and industry seldom exemplified in the lives of men of letters. In whatever light this work, the "Spy," be regarded, it is a marvellous creation. The opening of a new and fresh field of imaginative literature, it has never been surpassed in the essential qualities of the successful novel. Its obvious defects were all forgotten in the blaze of strong emotion. It has been unjustly compared with other works of its class; and the author was often styled, as much to his distaste as to his injury, the American Walter Scott. But no comparison of the kind can be just. Its originality of topic, style, and spirit is its most characteristic feature, and the real source of its universal popularity.—An interval of 2 years produced the "Pioneers." With far more truth than prefatory professions often disclose, Mr. Cooper has given its real motive and inspiration. He had written, he says, his first work because it was said he could not write a grave tale; so to prove that the world did not know him, he had written one so grave that nobody would read it. He wrote the second to see if he could not overcome this neglect of the reading world. The third, said he, "is written exclusively to please myself." Family pride, the well-remembered experiences of frontier life, and the intense love of nature acquired in childhood, found almost equal expression in this singularly beautiful and poetic tale. It lacks the stirring incidents and favorite familiar characters of the "Spy," but in its descriptions of nature, and pictures of pioneer experience and of happy domestic life, as well as in poetic feeling and literary finish, it is perhaps the ablest of his productions. With the exception of the "Bravo," it was the favorite of its author, and its composition was a labor of love from beginning to end. Every predilection was gratified; the position of the Temple family was amply asserted; and the wild glories of forest, hill, and lake, mingling with the earliest and most permanent impulses of his being, were reproduced in a manner equally gratifying to his pride, his taste, his affections, and his deeper views of life. Though it had not to beg for a publisher, it was nevertheless far less immediately popular at home than its predecessor. Abroad, however, its striking portraiture of American scenery, and the new phases of life it portrayed, made it a great favorite, and contributed at the time sensibly to the reputation of American literature.—His own tastes gratified, Cooper's next work developed a new and still more characteristic aspect of his genius. The "Pilot" appeared within a year after the "Pioneers;" and its immediate occasion is said to have been the perusal of Scott's "Pirate," whose awkward and unnatural descriptions of sea adventure, and ignorance of the sailor character, at once provoked the resolution to excel it by reproducing his own experiences and observation of life upon the seas. The "Pilot" outran in its first success all its predecessors; and though not equal in some of the best qualities to the "Red Rover," or others of his sea tales, it instantly gained a position which no subsequent work of the kind has been able even to contest. The highest critical authorities were first to proclaim its excellences. "The empire of the sea," exclaimed the "Edinburgh Review," "is conceded to him by acclamation." This, like the "Spy," was a bold attempt, which nothing but high creative abilities could have carried to success. It opened a wholly new life to reading landsmen, and inaugurated a school of imaginative works which has numbered amongst its cultivators some of the highest names of modern literature. Two years subsequently appeared "Lionel Lincoln," which, taking the "Spy" for a model, lacked originality, and fell far short of its predecessors in popularity, though evidently more elaborately and carefully written, and not without points of singular felicity and power. Its comparative failure seems to have put the author again upon his mettle, as after a brief interval appeared the "Last of the Mohicans," perhaps the most exciting, well sustained, and popular of his achievements upon a field he has ever held as peculiarly his own. Never before had the romance of the Indian character, the wild excitement of savage life, and the striking and novel features of the genuine trapper been so vividly depicted; nor had the author's dramatic powers ever been more successfully exhibited. Like its predecessors, it was immensely popular, and immediately reproduced in almost every civilized language. It contributed more to the general impressions of the old world as to aboriginal life in the new than all other works combined. Following this, in 1827, appeared the "Red Rover," generally esteemed the most dramatic and powerful of his sea tales; and in 1828, the "Prairie," scarcely less interesting as a romance, or less triumphant as a work of art, than the "Mohicans."—Between these two, the author with his family visited Europe, where they remained till 1833. His residence in Europe gave rise to some of the most unpleasant passages of his life. An ardent friend of his country and her institutions, he was quick to resent, in whatever sphere, the false imputations and slanders with which Europe, at that nascent period of our history, was filled; and yet this patriotism rendered him the more keenly sensitive to the faults of manner, principles, or conduct by which his countrymen were continually bringing this land into reproach. He was impelled to contend with both, and to appear to be pleased with none. Indignant at the enemies of republicanism for their principles, he was scarcely less so at its friends for their inconsistencies and faults. These faults he felt that it was both his right and duty to correct. His literary position, his unquestionable patriotism, and the zeal, not to say ostentation, with which he had defended his country in public and private, gave him, as he thought, the right to expect that well-meant rebuke of obvious evils would be both welcome and effective. He accordingly first wrote his "Letters of a Travelling Bachelor," the object of which was, amid much that was useful and entertaining, to point out some of the more glaring of our national defects. But however laudable the purpose, the effect was any thing but beneficial. This was the beginning of a series which it would have been equally to the credit and the comfort of Mr. Cooper to have left unwritten. The apparent censoriousness and assumption which overlaid such works as the "Residence in Europe," the "Letter to his Countrymen," and still more offensive "Homeward Bound," "Home as Found," and the "Monnikins," not only precluded popular favor, but gave an offence that required all the recollections of his genius and the splendor of his first achievements to suppress. While this series was in progress, and apparently all engrossed with political discussions, he sent forth another of his marvellous creations, the "Bravo," which, like the "Spy," the "Pilot," and the "Mohicans," broached a new idea, and gave to the world the first successful specimen of the novel of opinion—a species which has since grown to be a large and potent element of our literature. The "Bravo" united the most stirring incidents and vivid imaginative delineations, with a skilful and penetrative inculcation of political opinions. In Europe, it was received with mingled applause and hisses. As a work of art, it was hailed as one of his most masterly efforts; but its radical democracy and revolutionary ideas displeased the governing classes, by whom it was at once placed among the outlaws of literature. In Mr. Cooper's own estimation this was his ablest work, and, except the "Pioneers," most completely expressed the convictions of his understanding and passions of his heart. Alternating with some political works, Mr. Cooper published, beside the "Bravo," while still in Europe, the "Wept of Wish-ton-Wish," the "Heidenmauer," and the "Headsman of Berne." On his return to this country in 1833, there rapidly appeared the series of works which had been previously commenced, the aim of which was the correction of the national foibles. These productions had from the first provoked the warm retort of the periodical press in the United States, which as they proceeded in some instances descended to an intolerable license of personal abuse. Prior to his departure from Europe, he was heard to say that these assaults might go on without notice 5 years after his return; but if not then suspended, he would resort to legal redress. He was as good as his word; beyond the satires contained in his fictions, no word of defence was published by him to the many charges of his political enemies until full 5 years had elapsed. About this time Mr. Cooper published his "Naval History of the United States," the only historical production of his pen, except a series of naval biographies, originally published in a magazine. This was a work of great labor and research, which had long been projected, and was regarded by the author with a partiality which, with all its acknowledged excellences, the public judgment has hardly confirmed. Yet its painstaking accuracy, as well as the vigor and completeness of some of its descriptions, undoubtedly entitle it to a high place in historical literature, and render it confessedly the best work on the subject, if not entirely what was expected of his genius and his special familiarity with the subject. This work, following the personal tales and essays above referred to, and, in a few particulars, taking novel and unpopular views, elicited from the press attacks of such violence and personality as to provoke the author into the most remarkable series of legal prosecutions ever known in the annals of literature, and which continued for several years to absorb the larger share of his time and best energies of his mind. His representation of the battle of Lake Erie, especially, trenched upon some of the most cherished views of the public, in seeming to detract from Commodore Perry's accustomed honors in this exploit, and in assigning to Commodore Elliott, a comparatively obscure officer, who had never shared in the fame of the victory, an unexpected, if not the chief, merit in the affair. But, whatever may be the truth of the case, Cooper's position was taken from no personal antipathies to the one, or predilections for the other, but strictly from fidelity to historic truth: and its accuracy has the additional sanction of the award of three competent arbitrators to whom the whole question was submitted as the result of the legal prosecutions. For these prosecutions Cooper has been much censured: but an impartial survey of the whole painful episode will go far toward, we do not merely say relieving his course from the odium of vindictive passions, but toward investing the whole procedure with something of the dignity and merit of a public service. The law of libel, at the commencement of these suits, was undefined and well nigh nugatory. Practically, there was but little defence of private character against the most wanton assaults of the press. If the restraints of the law of libel were justifiable at all, there was now ample occasion for giving it a new definition and emphasis; and from all that transpired of Cooper, whether in public conduct or private speech, nothing is more clear than that the correction of this great evil was the leading motive for plunging into the sea of troubles which awaited him. He never denied nor desired to restrict the right of criticism. The harshest condemnations of his own works, when restricted to the works themselves, never evoked complaint or reply. But the immunity of personal character he believed in, and after a contest of years established. During this period some 20 distinct suits for libel were brought by him—in some cases 2 or 3 successive suits against the same offender, for libels occurring in the very comments upon the previous verdicts, and in all, or nearly all, he was successful. When it is considered that the press of the country was mostly arrayed against him, and that he fought in the open face of unfriendly juries, reluctant judges, and a strong popular prejudice, this simple fact goes far toward furnishing a vindication of his course. That he also wrought a reform in the habits and manners of the press, as well as revived the practical efficiency of a much neglected safeguard, is not now seriously questioned.—During the heat and strife of these libel suits, which, being almost wholly conducted in person, necessarily involved a great expenditure of energy and time, the reading world was surprised and delighted, almost to the forgiveness of every provocation, by the appearance of the "Pathfinder," which revived the charming scenes and characters of his most favorite creations. In none of the tales of the forest has Cooper displayed more refined taste, or genial feeling, or higher qualities than in this work. After the issue of another novel, founded on foreign scenes, "Mercedes of Castile," which, in spite of many excellent points, was hardly successful, this was followed by the last of the Leatherstocking tales, the "Deerslayer"—chronologically the last, but first in the plot of the series. This, too, had immense success, and was greeted with enthusiasm scarcely inferior to that which heralded the "Spy" or the "Pilot." About 1844 Mr. Cooper became interested in the political questions growing out of the tenure of lands in certain portions of the state of New York, and the organized refusal of the tenants or occupants to pay the accustomed rent toll. Every instinct of personal feeling, as well as political conviction, arrayed him strongly against the novel doctrines, and led to the preparation of the "Littlepage" tales—a series of novels of remarkable tact and skill, if not of imaginative force, the "Satanstoe," the "Redskins," and the "Chainbearer," which, if they had fortunately advocated the popular view of the question, would have been regarded as models of their kind. As it was, they fell into obscurity, and never gained the credit they were justly entitled to. From the termination of his suits to his decease, his pen was as busy as at any period of his life. There appeared in rapid succession the "Two Admirals," in 1842; "Wing and Wing" and "Ned Myers," in 1843; "Wyandotte," "Afloat and Ashore," and "Miles Wallingford," in 1844; the "Crater," in 1846; "Jack Tier" and "Oak Openings," in 1848; the "Sea Lions," in 1849; and the "Ways of the Hour," his last, in 1850—works which display, if not the vigor and genius of his earlier years, no decline of careful study or inventive skill; and which especially evince increasing strength and mellowness of religious feeling—a feature still more visible in his daily life. While engaged, in the following year, upon a work of historical character, after a few months' rapid decline, his extraordinary physical powers suddenly gave way, and he died, to the surprise and grief, not less of his family than of the public.—Personally, Mr. Cooper was a noble specimen of a man, possessing a massive and compact form, a countenance strikingly marked with the indications of intellectual strength, and glowing with manly beauty. His published portraits, though imposing, by no means do justice to the impressive port and vivacious presence of the man. In his social traits, so far as his native reserve and strong predilections would permit, he was magnanimous, hospitable, and kind even to a fault. Encountering in a ragged and diseased sailor, upon the docks of New York, an old messmate of his early sea life, his heart and home were open to him, and to his generous desire to help him on we are indebted for the touching story of "Ned Myers," which is but a literal narrative of facts. This was a type of the impulses perpetually springing and adorning his life. Frank, generous, independent, and not over-refined either by native constitution or culture, enemies were as plentifully made as easily reconciled by his singular admixture of opposing qualities. His intellectual life was checkered by much the same variety of lights. There were the elements of genius—originality of invention, keen insight into character, and magic creative skill, shaded by defects both of original mental structure and of literary culture, not less conspicuous. But taken all in all, no American writer has attained more just as well as universal fame, and none has more truly exemplified the higher qualities which we could desire to be characteristic of American literature. Though for some cause they secured the author but a limited remuneration, Cooper's works have had an unparalleled sale, both at home and abroad. Beside the fact that all the leading romances were reproduced as they appeared in numerous editions in France, Germany, Russia, and many other European countries, and were circulated largely and continuously in Great Britain, they have had a constant sale at home, which has increased with time, inducing more and more elegant forms, until at the present time there is in preparation an illustrated edition, in 32 volumes, which promises to be a fitting monument to the memory of our greatest imaginative writer.—Susan Fenimore, eldest daughter of the preceding, and author and editor of several popular works, chiefly descriptive of rural life. The first, "Rural Hours," was published in 1850, during the later years of Mr. Cooper's life, and won a permanent and honorable place in literature. It was followed in 1854 by "Rhyme and Reason of Country Life," a fine selection of choice descriptive passages, in prose and verse, relative to country life and its incidents, illustrated with suggestive and graceful notes, and introduced by a genial essay. An annotated edition of an English work, the "Journal of a Naturalist," was also published in 1852; and in 1858 a beautiful little tribute to the character of Washington, written for young people, and generously given in aid of the fund for the purchase of Mt. Vernon. Various popular contributions to periodical literature have also, from time to time, proceeded from her pen, though generally anonymous.

COOPER, Peter, an American manufacturer, born in the city of New York, Feb. 12, 1791. His maternal grandfather, John Campbell, was mayor of New York and deputy quartermaster-general during the revolutionary war, and expended a considerable private fortune in the service of his country. His father was a lieutenant in the war of the revolution, after the close of which he established a hat manufactory, in which his youthful son Peter aided to the extent of his strength. This period of Mr. Cooper's life was one of great anxiety and much hard labor, as his father was not successful in his undertakings, and had a large family to provide for. He attended school only half of each day for a single year, and beyond the humble knowledge thus gained, his acquisitions are all his own. At the age of 17 he was placed with John Woodward to learn the trade of coachmaking, and served out his apprenticeship so much to the satisfaction of his master, that the latter offered to set him up in business, which Mr. Cooper declined. He successively followed his trade; next the manufacture of patent machines for shearing cloth, which were in great demand during the war of 1812, but lost all value on the declaration of peace; then the manufacture of cabinet ware; then the grocery business in the city of New York; and finally he engaged in the manufacture of glue and isinglass, which he has carried on for more than 30 years. Mr. Cooper's attention was early called to the great resources of this country for the manufacture of iron, and in 1830 he erected extensive works at Canton near Baltimore. Disposing of these, he subsequently erected a rolling and wire mill in the city of New York, in which he first successfully applied anthracite to the puddling of iron. In 1845 he removed the machinery to Trenton, N. J., where he erected the largest rolling mill at that time in the United States for the manufacture of railroad iron, and at which subsequently he was the first to roll wrought iron beams for fireproof buildings. These works have grown to be very extensive, including mines, blast furnaces, and water power, and are now carried on by a company of which Mr. Cooper is the president. While in Baltimore Mr. Cooper built, after his own designs, the first locomotive engine that was turned out on this continent, and it was operated successfully on the Baltimore and Ohio railroad, thus identifying his name with the early history of railroads. In like manner he has taken great interest in the extension of the electric telegraph, in which he has invested a large capital. He is president of the New York, Newfoundland, and London telegraph company, honorary director of the Atlantic telegraph company, president of the American telegraph company, and president of the North American telegraph association, which represents and governs more than ⅔ of all the lines in the United States. Mr. Cooper has served in both branches of the New York common council, and was a prominent advocate of the construction of the Croton aqueduct. His great object, however, has been to educate and elevate the industrial classes of the community. He early became a trustee of the public school society, and at the time of its being merged in the board of education, Mr. Cooper was its vice-president. He subsequently became a school commissioner; but feeling that no common school system could supply a technological education, he determined more than 40 years ago that, if his exertions were successful, he would establish in his native city an institution in which the working classes could secure that instruction for which he, when young and ambitious, sought in vain. Accordingly the "Union for the Advancement of Science and Art," commonly called the "Cooper Institute," has been erected in New York at the intersection of the 3d and 4th avenues, between 7th and 8th streets, covering the entire block, at a cost of over $500,000. It is devoted by a deed of trust, with all its rents, issues, and profits, to the instruction and elevation of the working classes of the city of New York. It is to include a school of design for females, evening courses of instruction for mechanics and apprentices in the application of science to the business of life, a free reading room, and galleries of art and collections of models of inventions, and a polytechnic school. —Mr. Cooper is still engaged in active business. In religion he is a Unitarian.

COOPER, Samuel, D.D., a minister of Boston, born March 28, 1725, died Dec. 29, 1783. He was graduated at Harvard college in 1743, studied theology, and at the age of 20 he was invited to succeed his father in the Brattle street church as colleague with Dr. Colman. He was ordained, May 31, 1746, and continued 37 years in the ministry of that church. He took an influential part among the patriots of the revolution. He was the person to whom Dr. Franklin sent the letters of Hutchinson, and was one of the foremost in laying the foundation of the American academy of arts and sciences, and its first vice-president. Remarkable in prayer and in his pastoral offices for humility and simple reverence, he was at the same time an accomplished classical scholar; his sermons were perhaps unequalled in America for elegance and taste, and his correspondence was highly esteemed by several of the most distinguished persons in Europe.

COOPER, Thomas, a natural philosopher, lawyer, and politician, born in London, Oct. 22, 1759, died in South Carolina, May 11, 1840. He was early sent to Oxford, where he thoroughly studied the classics, though the bent of his mind was toward the natural sciences. While studying law, he extended his researches into anatomy and medicine. He was admitted to the bar and travelled a circuit for a few years; but, entering into the political agitations of the period, he was sent, in company with Mr. Watt, the inventor of the steam engine, by the democratic clubs of England to the affiliated clubs in France. In this latter country he took part with the Girondists, but perceiving their inevitable downfall, escaped to England. For this journey he and his friend Mr. Watt were called to account by Mr. Burke in the house of commons, which led to a violent pamphlet in reply from Mr. Cooper. His publisher proposing to print it in a cheaper form for general circulation, he received a note from Sir John Scott, attorney-general, informing him that although there was no exception to be taken to his pamphlet when in the hands of the upper classes, yet the government would not allow it to appear in a shape to insure its circulation among the people. While in France, he had learned the secret of making chlorine from common salt, and he now became a bleacher and calico printer in Manchester, but his business was unsuccessful. He next came to America, whither his friend Priestley had already emigrated, and established himself in his neighborhood in Pennsylvania as a lawyer. But the politics of this country were also attractive to him, and uniting with the democrats, he opposed with vivacity the administration of John Adams. For a violent attack on Adams in a Pennsylvania newspaper in 1799, he was tried for a libel under the sedition act of 1800, and sentenced to 6 months' imprisonment and a fine of $400. The democratic party coming into power, he transacted in 1806 the business of a land commissioner on the part of the state with such energy as to triumph over difficulties with the Connecticut claimants in Luzerne co., which had broken down 2 previous commissioners; but being appointed to the office of judge, he became obnoxious to members of his own party, and was removed in 1811 on a charge of arbitrary conduct. He then successively occupied the chair of chemistry in Dickinson college, in the university of Pennsylvania, and in Columbia college, S. C., of which last institution he became president in 1820, and in which he discharged also the duties of professor of chemistry and of political economy. On his retirement in 1834, the revision of the statutes of the state was confided to him, and he died in the performance of this duty. Dr. Cooper was alike eminent for the versatility of his talent and the extent of his knowledge. He published in 1794 in London a volume of "Information concerning America;" in 1800, a collection of political essays, reprinted from a Pennsylvania newspaper; in 1812, in Philadelphia, a translation of the "Institutes of Justinian;" in 1819, a work on "Medical Jurisprudence;" in 1812–'14, 2 of the 5 volumes entitled the "Emporium of Arts and Sciences," which were published in Philadelphia; and in 1826, at Charleston, S. C., his academic "Lectures on the Elements of Political Economy." He was also a vigorous pamphleteer in various political contests, and an admirable conversationist. In philosophy he was a materialist, and in religion a free-thinker.

COOPERSTOWN, a post village in Otsego township, and capital of Otsego co., N. Y., 169 m. W. of Albany; pop. of the township in 1855, 4,334. Situated at the outlet of Otsego lake, which is embosomed in hills 400 feet high, it enjoys some of the most beautiful and picturesque scenery in the state. The village is noted as having been the residence of the American novelist, James Fenimore Cooper, from whose father, Judge William Cooper, it derives its name. It is the seat of a female collegiate institute.

COORG, KOORG, or CADUGA, a district of S. Hindostan, among the W. Ghauts, bounded N. by Mysore and Canara, E. by Mysore, S. by Malabar, and W. by Malabar and Canara, between lat. 11° 56′ and 12° 45′ N., long. 75° 25′ and 76° 13′ E.; greatest length, 60 m.; mean breadth, 35 m.; area, 2,165 sq. m.; pop. about 60,000. It is extremely rugged, mountainous in all parts, covered in some places with forests of sandal and other woods, but in many others overrun with jungle. The soil, however, is fertile; rice is cultivated for exportation, pepper, cardamoms, and other spices are produced, and great attention is paid to cattle-raising. The climate is temperate, and generally healthy. The inhabitants are Brahmins. It is the custom for brothers of the same family to have their wives in common. There are no manufactures except of coarse cloths for domestic wear. Mercara is the capital. Coorg was formerly an independent principality, and considerably larger than the present district known by that name. It was seized by Hyder Ali in 1778, and parcelled out among many petty chieftains; but in 1787 the son of the deposed rajah succeeded in expelling the invaders. In 1832 the territory was added to the possessions of the East India company.

COOS, a N. co. of New Hampshire; area, 1,950 sq. m.; pop. in 1850, 11,853. The White mountains occupy the southern part. Among these mountains the Saco river takes its rise, and further north are the sources of the Connecticut. Near the banks of this latter stream, which flows along the W. border of the county, the soil is tolerably fertile. In the vicinity of some other smaller rivers the land is also cultivated with success, but the greater portion of the surface is hilly and unproductive. Indian corn, oats, potatoes, and hay are the staples. The productions in 1850 were 40,376 bushels of Indian corn, 99,773 of oats, 256,928 of potatoes, 30,795 tons of hay, and 358,445 pounds of butter. There were 3 woollen factories, 10 grist mills, 22 saw mills, 1 foundery, 5 starch factories, 5 tanneries, 16 churches, 2 newspaper offices, and 3,594 pupils attending public schools. The county is traversed by the Portland branch of the Grand Trunk railway of Canada. It was organized in 1803, and its name, an Indian word signifying pines, was given in reference to the pine forests which cover a large part of it. Capital, Lancaster.

COOSA, a central co. of Ala., named from Coosa river, which forms its S. W. boundary; area, 860 sq. m.; pop. in 1850, 14,543, of whom 4,120 were slaves. The surface is hilly, and the soil very productive. Corn and cotton are the staple productions. The pasture lands are excellent, and perennial springs of the purest water are found in almost all parts of the county. Numerous small streams afford an abundance of water power, which has been applied to several saw and grist mills. In certain mineral productions Coosa county is remarkably rich. Lead and iron mines have been opened; statuary granite, of very superior quality, easily worked, and so near the surface as to be obtained without much labor, is brought from a place near Bradford. In the northern part is an immense quarry of beautiful marble, extending through Coosa and Talladega into Benton co. The marble is said to be far superior to any other obtained in the United States, and many have pronounced it equal to the finest specimens of Italian marble. The productions in 1850 were

418,991 bushels of Indian corn, 126,288 of sweet potatoes, and 5,524 bales of cotton. There were 8 grist and saw mills, 8 tanneries, 1 cotton factory, 61 churches, 2 newspaper offices, and 881 pupils attending public schools. The county was formed about 1834 from a portion of the Creek Indian territory. Capital, Rockford.

COOSA, a river of Ga. and Ala., 350 m. long. It is formed by the union of the Etowah and Oostenaula at Rome, takes a southwesterly course, and after passing the Ten islands in Alabama, flows southward to the Tallapoosa, joining that river to form the Alabama. From Rome to the Ten islands, a distance of 180 m., it is navigable by steamboats. Below the latter point, the shoals which obstruct the channel at short intervals as far as Wotumpka, prevent the passage of any vessels except flat-boats.

COOT, a lobe-footed bird of the order *grallæ*, family *rallidæ*, and genus *fulica*. In this genus the bill is shorter than the head, strong, straight, and elevated, forming a broad shield on the forehead; the wings are short; the tail is very short and rounded; the tarsi are shorter than the middle toe; the toes are long, united at the base, lobed on each side, the inner toe with 2, the middle with 3, and the outer with 4 rounded membranous lobes; the hind toe is lobed its whole length. There are about a dozen species of the genus, scattered over the world, migrating from north to south in winter. The American or cinereous coot (*F. Americana*, Gmel.) is about 14 inches long, with an extent of wing of 25 inches; bill long, the back 1¼ inches; weight about 1 lb. The head is small, neck slender, body rather full; feet strong, tibia bare a little above the joint; the plumage is soft and blended. The bill is grayish white, with a dusky spot near the end; the general color of the upper parts is deep bluish gray, blackish on the head and neck, and olivaceous on the shoulders; the quills are grayish brown, with darker tips; edge of the wings, outer margin of 1st quill, tips of outer secondaries, and lower tail coverts, white; tail brownish black; under parts light bluish gray. They are found throughout North America, and in New England in the autumn, retiring south about November. Their favorite resorts are the borders of ponds and rivers lined with thick reeds, to which they can fly on the approach of danger; they swim, dive, fly, and run well; they rise, however, with difficulty, fluttering the wings and striking with the feet to assist; they fly high, with quick motion of the wings. They feed, especially in the morning and evening, near the edge of the water and in the open lands bordering on streams and lakes. The food consists of aquatic insects and plants, mollusks, small fish, worms, seeds, and even tender grass and leaves. In the south they are seen in flocks of several hundred. They probably breed in the northern states; the nest, built of decayed vegetable matter and sticks, is placed near the water among the reeds; it is sometimes carried away by inundations, when it floats without injury to the eggs or displacing the female; the eggs are from 7 to 14 in number, ash-gray color, spotted minutely with black, and the young take to the water as soon as hatched. A common name for this species is the mud hen. They are abundant in the New Orleans market in winter, and are much used as food by the poorer classes, who skin instead of plucking them. In New England the name of "coot" is improperly given to several species of duck, especially to those of the genus *oidemia;* among the species thus named are the scoter duck (*O. Americana*, Richards.), white-winged or velvet duck (*O. fusca*, Linn.), and black or surf duck (*O. perspicillata*, Linn.).

COPAIBA. See BALSAMS.

COPAIS, or TOPOLIAS, a celebrated lake in Bœotia, the largest in Greece, 47 m. in circumference. It is formed by the Cephissus and the numerous small streams which descend from the surrounding hills. Its waters find their only outlet through subterraneous passages in the limestone of the surrounding country.

COPAL, the resinous juice of the *rhus copallinum* of Mexico and the *elæocarpus copalifer* of India. It is obtained by the natives by cutting a notch in the tree, in which it collects. Another variety of the copal tree is found on the coast of Guinea, where lumps of the resin are gathered from the sands by the negroes. Copal is of various colors, from a pale yellow hue to a dark brown, and of different degrees of transparency. It often includes insects and animal remains. It is harder than other gums, breaks with a conchoidal fracture, and has neither odor nor taste. An excellent and durable varnish is prepared from it. It melts with the heat of a spirit lamp, giving out an oily substance, and becoming deeper in color until it is converted into charcoal. Copal is not easily soluble in alcohol, the greater part merely swelling up and softening; but pulverized and then dried at a moderate heat, it dissolves in alcohol of 96 per cent. Camphor first dissolved in the alcohol increases its power of taking up the copal. It is much more soluble in ether, and the solution may be diluted with alcohol without the copal precipitating. Different kinds of copal are differently affected by ether; some dissolve readily, others with great difficulty. Varnishes of different qualities may be thus obtained by the same solvent. After ether, some of the volatile oils are the best solvents of copal, as the oils of rosemary, lavender, and spruce. The oils of petroleum and turpentine have little action on crude copal. When fused, it dissolves more easily, but produces inferior qualities of varnish. Its composition, according to Dr. Ure, is carbon 79.87, hydrogen 9.00, oxygen 11.1; being of hydrogen 7.6 in excess above the quantity necessary to form water with the oxygen. An excellent recipe for varnish is the following given by Böttger: 1 part of camphor is dissolved in 12 parts of ether; 4 of copal are then added, and allowed to swell in it, when 4 parts of anhydrous alcohol and ½ part of rectified oil of turpentine are added. It is stated by Dr. Wight that on the Malabar coast a variety of this resin, called *piney dammar*, is made into candles, of which some specimens sent to England sold for very high prices. They diffuse an agreeable fragrance, give a clear light with little smoke, and consume the wick without requiring snuffing.—A fossil copal is described in the books of mineralogy, which resembles the resin in its hardness, color, lustre, transparency, and difficult solubility in alcohol. It is found in the blue clay near London, and is called Highgate resin; and also in flattened drops on calc spar on the walls of a trap dike at an old lead mine in Northumberland. A similar fossil has been also obtained in the East Indies. The composition of the mineral is carbon 85.41, hydrogen 11.78, oxygen 2.67, ashes 0.136.

COPAN, a ruined city of Guatemala, Central America. Its remains, scattered over a tract of 2 m. in length, on the banks of the Copan river, are exceedingly interesting, and comprise the walls of a vast edifice 624 feet long, supposed to have been a temple, and various buildings with colossal monolithic statues elaborately carved. They are fully described and illustrated in Stephens's "Central America."

COPARTNERSHIP. See PARTNERSHIP.

COPE, CHARLES WEST, an English artist, born in Leeds about 1815. He studied in the royal academy, and at the age of 16 exhibited his first picture. In 1843 his cartoon of the "First Trial by Jury" gained a prize of £300 in the Westminster Hall competition; and in the succeeding year he obtained a commission to paint one of the 6 frescoes for the new house of lords. In 1844 he was elected an associate, and in 1848 a member of the royal academy. He also received commissions to execute 2 additional designs for the new palace, illustrative of incidents in the history of England.

COPENHAGEN (Lat. *Hafnia;* Danish, *Kjöbenhavn*, or the merchant's harbor), the capital of Denmark, situated partly upon the island of Seeland in the Baltic, and partly on the island of Amager; lat. 55° 40′ N., long. 12° 34′ E.; pop. in 1855, 143,591. Beside several suburbs, it consists of 3 principal divisions, viz.: the old city or West End, the new city or Frederiksborg, and Christianshavn upon the island of Amager. The city is protected by the fortress of Frederikshavn. The channel between the main island and Amager constitutes the harbor, and has ample room for 400 vessels. The city has 230 streets, 13 public squares, 22 churches, a synagogue, 30 poorhouses, 22 hospitals, over 5,000 dwelling houses, several theatres, and 4 royal palaces. The royal residence, Christiansborg, is one of the most magnificent buildings in Europe. It contains the royal picture gallery and a museum of northern antiquities. The Amalienborg, consisting of 4 palaces built in the architectural style of the renaissance period, is also richly furnished with works of art. The Charlottenborg is now the seat of the academy of science, while the Rosenborg contains a valuable historical collection. Of the 22 churches, the cathedral of Our Lady is the most gorgeous and magnificent; in it stands the original marble group by Thorwaldsen of Christ and the apostles. Altogether Copenhagen is one of the finest cities of Europe. Beside being the seat of the highest administrative and judicial departments, it is the centre of Danish science and literature. The university, founded in 1475, has usually about 1,200 students. A library of 100,000 volumes, a botanical garden, an observatory, and several cabinets of natural history, are connected with it. The royal library, one of the largest in Europe, contains 400,000 volumes and 18,000 manuscripts. A military and naval academy, a polytechnic school, the royal academies of science and of fine arts, many scientific and literary societies, and institutions for the education of the blind and deaf and dumb, are concentrated at Copenhagen. One of its greatest attractions is the Thorwaldsen museum, founded in 1846, a collection of the works of the celebrated sculptor whose name it bears. The commerce of Copenhagen is of much importance. Its shipping consists of about 400 vessels. There are regular steamship lines to Kiel, Lübeck, Norway, England, and France, and a railroad connects it with Corsoer. There are several journals published in Copenhagen, of which the *Dagbladet* and *Flyveposten* are the most important. Of banking institutions Copenhagen has only one, the royal bank, capital $2,500,000. Copenhagen was founded probably in the course of the 11th century. It was originally a fishing village, but as early as the close of the 12th century it became a busy trading town. In 1204 it obtained a city charter, and in 1443 was made the seat of government. During the wars of the Hanse towns it was frequently besieged and suffered heavily. In 1801 (April 2), the great naval action in which Nelson defeated the Danes was fought near Copenhagen. In 1807 the city was bombarded by the British under Lord Cathcart for 3 days (Sept. 2–5), when 305 buildings were destroyed entirely, 2,000 more rendered uninhabitable, and 2,000 persons killed.

COPERNICUS (in Polish, KOPERNIK), NIKOLAUS, a German astronomer, discoverer of the system of planetary revolutions, born at Thorn, in Prussia, Feb. 19, 1473, died at Frauenburg, June 11, 1543. After receiving the rudiments of a classical and scientific education in his father's house, he went in 1491 to the university of Cracow, where he studied medicine till he received the degree of doctor, and also devoted himself to mathematics and astronomy, to which he was incited especially by the example of Regiomontanus. In 1497 he studied astronomy under Domenico Maria at Bologna, in 1499 at Rome, where he gained a reputation rivalling that of Regiomontanus, taught mathematics there with eminent success, and in 1502 returned to Cracow and was made canon of Frauenburg by his uncle the bishop of Ermeland. Having overcome the opposition which was made to his settlement by the conflicting claims of others, he divided his time into 3 portions: one for the duties of his clerical office, one for the gratuitous practice of medicine among the poor, and one for the pursuits of astronomy. He formed very few acquaintances, and regarded conversation as useless except when with learned men upon grave subjects. Struck with the complexity of the Ptolemaic system of the universe, which had prevailed over every other hypothesis advanced during 2,000 years, he had believed from 1507 that nature follows simpler laws, and had sought to explain the planetary motions upon a more rational principle. He reviewed every known astronomical system: that of the Egyptians, which made Mercury and Venus revolve about the sun, but the other planets and the sun itself round the earth; that of Apollonius of Perga, which made the sun the centre of the planetary motions, but which supposed that luminary to revolve like a moon round the earth; that of Nicetas, Heraclides, and others, which, while making the earth the centre of the system, gave it a movement of rotation on its axis; that of the Pythagoreans, according to which the sun, though not stationary, was the centre of the system; and the bold theory of Philolaus, according to which the earth was removed from the centre, and made both to rotate on its axis and to revolve round the sun. He at length assumed that the sun and stars are stationary, that the moon alone revolves about the earth, that the earth is a planet whose orbit is between Venus and Mars, that the planets revolve about the sun, and that the apparent revolution of the heavens is caused by the rotation of the earth on its axis. Though he thus developed the theory of the planetary motions, as it has since been established by evidence, he did not publish his views until, after testing them by 23 years of careful observation and computation, he supposed that they accounted for the minutest facts and for all the apparent planetary stations and retrogradations. His discoveries had attracted the attention of astronomers, who were eager to see the data and proofs, while Copernicus, though he had already finished the composition of a book detailing his views, hesitated to publish it till the most thorough study should prove that there were no defects in its statements or principles. His 6 books *De Orbium Cœlestium Revolutionibus* were printed at Nuremberg in 1543 *et seq.* (later editions, Basel, 1566, and Amsterdam, 1617 and 1640), under the care of Rheticus, one of his disciples; and the first copy of the work was placed in the hands of Copernicus on the very day of his death. Beside his principal work, Copernicus published minor treatises on morals, trigonometry, and coinage. The tower from which he made his observations, and the ruins of a hydraulic machine constructed by him, may still be seen at Frauenburg. Monuments were raised to his memory at Cracow in 1822, with the appropriate inscription from the book of Joshua: *Sta, Sol, ne moveare;* at Thorn, in 1853; and a colossal statue at Warsaw, in 1829, by Thorwaldsen. His life has been written by Gassendi (Paris, 1654), by Westphal (Constance, 1822), and by Czynski (Paris, 1847).

COPIAH, a S. W. co. of Miss., lying W. of Pearl river, which at times is navigable thus far for small boats; area, 960 sq. m.; pop. in 1850, 11,794, of whom 5,480 were slaves. Cotton, Indian corn, and rice are the staples. The productions in 1850 were 436,483 bushels of Indian corn, 42,174 of oats, 117,006 of sweet potatoes, 52,208 of peas and beans, 241,685 lbs. of rice, and 9,318 bales of cotton. There were 24 churches, 1 newspaper office, and 436 pupils attending public schools. In the Indian language the word Copiah signifies screech-owl. Capital, Gallatin.

COPIAPO, a town of Chili, in the province of Atacama, situated on a river of the same name; pop. 4,000. It is noted as the centre of an important mining district (see CHILI), and for the extraordinary frequency of earthquakes. Its trade is carried on through the port of the same name (pop. 1,200), at the mouth of the river, and Caldera, another seaport town with which it is connected by railway. The town was almost destroyed by an earthquake in 1819, and has received much injury at other times from the same cause.

COPLAND, JAMES, an English physician, born at Deerness in the Orkney islands in 1791. He studied medicine at Edinburgh, and after having in 1815 received his doctor's diploma, he visited the principal hospitals of Europe, and spent some time in Africa, in the investigation of the diseases peculiar to that part of the world. In 1820, 2 years after his return to London, he became a member of the royal college of physicians. In Jan. 1822, he assumed the editorship of the London "Medical Repository." He has published "Outlines of Pathology and Practical Medicine," "Elements of Physiology," and a "Dictionary of Practical Medicine," which has been reprinted in the United States and translated into German. In 1850 he published an essay on palsy and apoplexy.

COPLESTON, EDWARD, D.D., an English divine and author, born at Offwell, Devonshire, Feb. 2, 1776, died near Chepstow, Oct. 14, 1849. He was educated at Oxford; in 1802 he was appointed professor of poetry there, and in 1813 published his lectures under the title of *Prælectiones Academicæ.* In 1810 and 1811 he wrote 3 replies to strictures upon the university of Oxford which had appeared in the "Edinburgh Review." He also contributed to the "Quarterly Review," wrote an "Inquiry into the Doctrines of Necessity and Predestination" (London, 1821), and in 1827 was nominated to the bishopric of Llandaff and deanery of St. Paul's, London.

COPLEY, JOHN SINGLETON, an American artist established in London, born in Boston, Mass., July 3, 1737, died in the former city in 1815. Without the aid of instructors, and before seeing any tolerable picture, he painted pieces which were highly admired. In his 17th year he adopted painting as a profession, and

In 1760 he sent to the royal academy a picture of a "Boy and Tame Squirrel," the coloring of which was deemed exquisite. He obtained a considerable income as a portrait painter, till in 1774 he visited Italy, where for 2 years he studied especially the works of Titian and Correggio. In 1776 he went to London, and was joined there by his wife and children from Boston. The war of the revolution rendering it difficult for him to return to America, he established himself in London, and in 1783 was chosen a member of the royal academy. The most celebrated of his works is the "Death of Lord Chatham," now in the national gallery, representing the orator falling after his speech in opposition to the American war, and containing also portraits of the most distinguished men of the house of lords. It was engraved by Bartolozzi on a plate 30 inches long and 22 wide, and impressions were sent by the painter to Washington and John Adams. Copley afterward painted many subjects illustrating the history of England. In 1790 he was commissioned to paint the large picture which now adorns the council chamber of the Guildhall, of the "Siege and Relief of Gibraltar," and in prosecution of this task visited Hanover to obtain true portraits of 4 Hanoverian officers who had commanded regiments in alliance with the British. He pursued his profession with vigor and great distinction till his death. Some of his most esteemed paintings are portraits of several members of the royal family; "Major Pierson's Death on the Isle of Jersey;" "Charles I. demanding the 5 Impeached Members in the House of Commons;" and the "Surrender of Admiral de Winter to Lord Duncan." They are remarkable for correctness of drawing and brilliancy of coloring. His best works were collected by his son Lord Lyndhurst, and many of them have been engraved.

COPPER (Lat. *cuprum*, from Cyprus the island, in which the ores of this metal were mined by the ancient Greeks). This metal, as already mentioned under the article Brass, was one of the first known to man. Tubal Cain, the 7th in descent from Adam, we are told, was "an instructor of every artificer in brass and in iron." In the book of Job we read that "copper is molten out of the stone" (xxviii. 2). Cheops, it is recorded, worked a copper mine in the peninsula of Sinai in the 4th dynasty. The ancient Egyptians employed an alloy of it for working hard stones, and Wilkinson suggests they may have had the art of hardening it. (See Bronze.) The Syrians and Phœnicians, as also the Greeks and Romans, consumed the metal largely in the manufacture of monuments and statues of bronze. The single colossus of Rhodes, after having lain in fragments for 9 centuries, is said to have required 900 camels to convey its pieces away. The ores seem, therefore, not only to have been worked extensively by the ancients, but the skill and facilities for producing large castings appear to have been quite equal to those possessed by the moderns. Beside its use as an alloy in the manufacture of bronze, it was also employed in coin in the pure state. The metal itself was probably first discovered, as it is now found, in a native state, and by the melting of this the nature of the rich ores associated with it came to be known. The obscure races that inhabited this continent before the Indians possessed an acquaintance with it, as appears from the various small utensils of copper found in the ancient mounds of the western country; and the extensive mining works, probably of the same people, at Lake Superior (to be noticed more particularly in the article Copper Mines), testify to the knowledge of it possessed by some ancient race of greater skill than the Indians. The Aztecs of Mexico made use of chisels and axes of copper, some of which are found with the large half-finished blocks of granite in the quarries of Mitla; and these naturally suggest the possibility of these people having had the art of giving to the metal hardness adapted to its use for quarry tools. Prescott points out other resemblances in their works to those of the Egyptians. ("Conquest of Mexico," appendix, part I.) The Peruvians, too, used copper for the same purposes; and Humboldt (*Vues des Cordillerας*) gives the composition of a chisel found in a silver mine opened by the incas near Cuzco. It was 94 per cent. copper and 6 per cent. tin. This is almost identical with the composition of the chisel found by Wilkinson at Thebes, which was 94 per cent. copper, 5.9 per cent. tin, and 0.1 per cent. iron. The Scandinavian tumuli, opened in Denmark, have afforded similar collections of copper utensils of very remote antiquity. Many of these are preserved in the museum of Copenhagen. Among them are knives, daggers, chisels, hammers, wedges, axes, &c. There are swords and knives with blades of gold and cutting edges of iron; some are of copper, also similarly faced, the iron appearing to be the rare and choice metal. In the late work of J. Arthur Phillips and John Darlington, "Records of Mining and Metallurgy," are given many analyses made by Mr. Phillips of coins and sword blades, some of the former dating back as far as 500 B. C. In the most ancient coins the alloy is, copper 62 to 72 per cent., tin about 7, and lead from 19½ to 29.32 per cent. Tin is almost invariably present. Zinc first appears in specimens about the commencement of the Christian era. The cutting instruments are uniformly composed of copper and tin, generally about 1 part in 10 of the latter, and sometimes lead forms a small part of the alloy.—During the middle ages there is little recorded concerning the working of copper mines and the use of the metal. Copper has been obtained in recent times from the mine of Rammelsburg, near Goslar, in Lower Saxony, which was worked in the 10th century. The Swedish mine of Fahlun competed with the above in the production of copper in the 12th century; and in the next century the mines of Thuringia were worked. In England the Parys mine in Anglesea, it is believed, was worked by the Romans. This was very productive in the latter part of the 18th century, causing by the abundance of its ores the price of the metal to be considerably reduced. In 1799, when it was nearly exhausted, the price of copper rose again to £128 per ton. The rich veins at Newlands near Keswick were worked in 1250; and in 1470, as appears by a charter granted by Edward IV., the business was extensively carried on. The metal was obtained at Ecton Hill in Staffordshire, previous to its discovery in Cornwall. The mines of Cornwall, worked for tin at very early periods, appear to have been little regarded for the copper ores they contained before the middle of the 18th century. In the survey of Cornwall by Richard Carew, 1602, it is stated that "copper is found in sundrie places, but with what gaine to the searchers I have not been curious to enquire, nor they hastie to reveal. For at one mine (of which I took view) the owre was shipped to be refined in Wales, either to save cost in the fewell, or to conceale the profit."—Copper is a metal remarkable for its peculiar fine red color bordering upon yellow, and for its disagreeable taste and smell when rubbed. Obtained in very thin films of pure metal by passing hydrogen gas over the oxide in a heated tube, it is transparent, and by the light transmitted through it appears green, but by reflected light red. Its specific gravity is from 8.8 to 8.96, varying according to the method of its manufacture. Its hardness is from 2.5 to 8, being about the same as that of gold and silver. It is so ductile that it is hammered into very thin sheets and drawn out into fine wire. In tenacity it ranks next to iron—a wire $\frac{1}{13}$ inch in diameter sustaining a weight of 800 pounds. Its power of conducting heat is $2\frac{1}{2}$ times that of iron. It expands, when heated from 82° to 212° F., $\frac{1}{581}$ of its length. It melts at a full red heat estimated at 1,996° F., and at a white heat the vapors passing from it burn with a green flame. Pieces of the metal in an open coal fire often tinge the flame green. This, which seems to indicate easy inflammability of the metal, does not really prove it. In fact, M. Berthier, who remarks this, affirms that it is very little volatile; for after having heated a certain weight of the metal in a brasqued crucible in a furnace employed for baking the Sèvres porcelain, it lost only $\frac{1}{2}$ per cent., though it remained in the furnace the whole time of one baking. When boiled, however, at a high temperature and open to the air, fumes escape which when condensed form small metallic globules coated with oxide of copper. Very finely divided copper may be made to burn like tinder; and exposed to a stream of oxygen gas, a beautiful green light is produced. In a dry atmosphere the metal does not change; but in moist air it becomes covered with a greenish crust of carbonate and oxide. Copper is readily dissolved by nitric acid, with disengagement of red fumes of nitrous acid. Hydrochloric acid dissolves it very slowly, unless the metal be in a finely divided state. In dilute sulphuric acid no action takes place, but in the concentrated oil of vitriol a solution is effected. In obtaining these solutions water is never decomposed, and when, as in the last instance, the metal is attacked with concentrated sulphuric acid, sulphurous acid is disengaged and not hydrogen, as when zinc is similarly treated. The atomic equivalent of copper is 81.7, and its symbol is Cu.—Copper is found crystallized in octahedrons, rhomboidal dodecahedrons, and various modified forms; when precipitated by galvanic action upon a plate of iron, the crystals are octahedral. It is unsurpassed among metals in the extraordinary size of its masses found uncombined with other substances; and it is also distinguished for the wonderful variety of its ores, most of them of great beauty in their crystallized forms and brilliant colors. With oxygen copper enters into 4 combinations, of which 2, the red oxide, Cu_2O, and the black oxide, CuO, are well characterized crystallizable salts. The deutoxide, CuO_2, is occasionally produced in the chemical laboratory by oxidizing the protoxide in solution; and the 4th is an acid called cupric acid, of which little is known. The sub or red oxide of copper is a valuable ore of the metal, often found with other copper ores, both massive and in beautiful ruby red crystals, commonly of octahedral forms. Its hardness is 8.5–4; sp. gr. 5.8–6.15. It contains 88.8 per cent. of copper and 11.2 per cent. oxygen. It is often one of the most splendid species of the various ores of copper. Frequently it occurs in connection with metallic copper, which has then probably been produced by its deoxidation. The protoxide or black oxide is an artificial product, but is also formed upon the surface of metallic copper, when this is heated in the air, the red oxide being a preceding stage of the change.—Next to iron, copper may be regarded as the most useful metal, and in its general distribution it also comes next to the most important of all metals. It is found in some of its combinations in almost all countries, and with its ores the native metal is usually met with in occasional specimens of massive or spongy, filiform, radiated, and arborescent structure. Among the various ores of this metal, a few of the most important only will require particular notice. The native metal and red oxide have already been spoken of. The sulphuret of copper, called also copper glance, vitreous copper, &c., is a rich ore of composition represented by the formula Cu_2S, and containing 79.8 of copper and 20.2 of sulphur. It is a soft, lead-gray ore, of metallic lustre, easily cut with a knife; of hardness 2.5–3, and sp. gr. 5.5–5.8. It fuses readily, and is easily reduced to a metallic state upon charcoal before the blowpipe. The primitive form of the crystal is a 6 sided prism; but the secondary forms of hexahedral tables, stellate and twin crystals, are commonly met with. Fine crystals are found in the mines of Cornwall, and also in that of Bristol, Conn. It is unusual, however, for this rich ore to be found in such quantity as to add largely to the percentage of the yield of the mines.—Variegated copper, called also purple copper, and by the miners horse-flesh copper, is distinguished by its various shades of color, as blue, purple, copper red, and pinchbeck brown, which, bright upon a freshly exposed surface, soon become dull. It is a brittle ore, of hardness 3, and sp. gr. 4.5–5. It is like the preceding species in its action before the blowpipe, but the metallic globule obtained by reduction is magnetic from the small quantity of iron present. The crystals are derived from the octahedron. The composition of the crystallized ore appears to vary slightly in the relative proportions of copper, sulphur, and iron, though it is probably a chemical compound of 1 atom of sulphuret of iron and 2 of the sulphuret of copper of the formula above given, represented by the formula $FeS+2Cu_2S$. The analyses generally give of the pure ore from 56 to 63 per cent. of copper, 21 to 28 per cent. of sulphur, and 7 to 14 per cent. of iron. By analysis of crystals from mines near Redruth (the only mines in Cornwall which produce this species), Varrentrapp obtained copper 58.20, sulphur 26.98, and iron 14.85. It has been found in considerable quantity at the Bristol and Chester copper mines of Connecticut.—Gray copper is one of the sulphur compounds rarely seen in this country. It is of a dark steel-gray color, of compact and granular structure, and cleaving in the planes of octahedrons. Its hardness is from 3 to 4.5; sp. gr. 4.5–5.11. It often contains silver, mercury, antimony, arsenic, zinc, and iron. The percentage of sulphur is usually about 25; of copper 37. In Cornwall and the Hungarian mines it is met with in tetrahedral crystals, and is sometimes sufficiently abundant to be of some importance as a workable ore. In this country it has been detected by Dr. Genth, at a mine near Gold Hill, Cabarrus co., N. C.—Pyritous copper, or copper pyrites, is the principal source of the copper of commerce. The pure ore is of a yellow color, resembling brass, somewhat darker than iron pyrites, and distinguished from it by its greater softness, being easily scraped with a knife to a greenish black powder. Its bright surface, often iridescent when freshly exposed, soon tarnishes in the air. Its crystals are of tetrahedral forms, occurring in a great variety of modifications of the cube and octahedron. Its hardness is 3.5–4; sp. gr. 4.1–4.3. The composition is that of a double sulphuret of copper and iron. The formula, $CuS+FeS$, is deduced from the following analysis by Phillips, which may be regarded as representing its average composition: copper 30.00, sulphur 35.16, iron 32.20, silica 2.64. The formula of Ramelsburg is $Cu_2S+Fe_2S_3$ = copper 34.6, sulphur 34.9, iron 30.5. It is never obtained in large quantity, however, of purity corresponding to these analyses, but is always intermixed with more or less iron pyrites through the quartz which constitutes the gangue of the ore, and is the principal constituent of the veins. From the gangue the ore is partially separated by the processes of assorting, crushing, washing, jigging, &c., called dressing; and if by this means it is brought to a percentage of 6 or 7 of copper, it is in Cornwall a merchantable ore. This species is the most common product of mines furnishing copper ores; and when near the surface the oxides and carbonates are sometimes abundantly found, they gradually disappear in depth, giving place to the pyritous copper, which at last constitutes the main dependence of the mine. The finest crystals met with in this country are at the lead and copper mines at Ellenville, Ulster co., N. Y.—Black oxide of copper usually occurs as an impure earthy ore resulting from the decomposition of other ores, and mixed with more or less sulphuret of copper, pyrites, &c. At Copper Harbor, Lake Superior, a vein of this ore in a massive and crystallized state was opened in 1846, from which about 20 tons were extracted, when the mine was exhausted. This ore, according to the analysis of J. D. Whitney, was a chemical compound of oxygen and copper, in the proportions of 20.15 of the former and 79.85 of the latter in 100 parts. The crystals were cubes with truncated angles; the ore of dark steel-gray color, opaque, with shining streak; hardness, 3; sp. gr. 6.25.—Two species of the carbonate of copper are recognized by mineralogists; the one called azurite, or blue carbonate, and the other malachite, or green carbonate. The former is rarely met with as a workable ore; it is found in concretionary forms and crystals upon other ores of copper. It is recognized by its bright azure-blue color; and when crystallized it is semi-transparent and in forms derived from the rhomboid. Its hardness is 3.5–4.26, and sp. gr. 3.5–3.8. Its composition is represented by the formula $2CuO, CO_2+CuO, HO$ = carbonic acid 55.6, protoxide of copper 69.2, water 5.2. The most celebrated locality of the ore is at Chessy, near Lyons, in France, and it has from this been called Chessy copper. It is found at several places in Pennsylvania and New Jersey, but only in small quantities. Malachite is usually met with in massive forms, and as an incrustation of botryoidal, mammillary, and stalactitic surface, its structure sometimes radiated, fibrous, and banded in different colors. When crystallized, the figures are derived from the oblique prism. Its hardness is 3.5–4; sp. gr. 3.7–4.0. Its composition is a protocarbonate of copper, $2CuO, CO_2+HO$, yielding by analysis carbonic acid 19.9, protoxide of copper 71.9, and water 8.2. This ore is distinguished for its richly variegated green colors, and its fine texture, which admits of its receiving a high polish. It is consequently highly esteemed as an ornamental stone, and is converted into tables, vases, and a variety of articles of great beauty. The mines of Siberia furnish the largest quantities of it. One at Nijni Tagilsk, belonging to M. Demidoff, is said to have yielded several hundred tons of pure malachite. A single mass measured on one face 9 feet by 18. The blocks when cut into slabs are somewhat brittle by reason of weak seams which cross them; and the stone in large articles is therefore used in small pieces, set in mosaic, and secured upon a back of metallic framework. The pieces are arranged to form by their shades of color pleasing patterns, and the cement employed is made up of fragments of the stone. In the great London exhibition the display of malachite in the Russian department was most rich and attractive. A pair of doors of this material measured 14 feet 5 inches in height by 7 feet in width. They required the labor of 30 men day and night for one year preceding the exhibition. Fine specimens of malachite are brought from the N. coast of Africa; and they are met with in the copper mines of Cuba and Chili. Most of the mines of copper ore in the United States furnish small quantities of it. —Chrysocolla is an ore which has somewhat the appearance of the preceding, but is usually of lighter shades of green passing into blue. It occurs incrusting other ores of copper, generally presenting a botryoidal surface. Its hardness is 2–3; sp. gr. 2–2.4. Its chemical composition is: silica 34.3, oxide of copper 45.2, water 20.5 = $3CuO, 2SiO_3 + 6HO$. It is of common occurrence among copper ores of this country and other parts of the world.—Sulphate of copper, or blue vitriol, though more familiar as an artificial product, is frequently met with in copper mines, crystallized in long, slender, oblique prisms upon their walls. It is produced by the decomposition of pyritous copper, taken up by the water percolating through the ore, and is deposited on its evaporation. The water issuing from the mines often contains so much of it, that it is an object to separate it, which is done by throwing in bits of iron, for which metal the sulphuric acid combined with the copper has a greater affinity, and, uniting with this, the copper is set free in a metallic state. On account of its finely divided state, it is liable to be soon converted into an oxide. At the Rio Tinto mine in Spain, it is stated that about 90 tons of metallic copper are thus annually obtained by the consumption of 120 tons of iron. At Wicklow, Ireland, pits are prepared at the mines for the reception of the water to be subjected to this treatment; and at one time 500 tons of iron were thrown into them. In a year the iron had disappeared, and for every ton, from 1½ to 2 tons of a reddish, muddy-looking oxide of copper was obtained, which yielded 80 per cent. of metal. It is seen often at some of the mines in this country, as at the McCulloch and other mines of the gold region of North Carolina, and at the Hiwassee mine, Tenn. It is artificially produced by several methods, one of which is by dissolving old copper in sulphuric acid and crystallizing. The crystals are very soluble in water, giving to it an acid reaction. They have a strong metallic, styptic, and nauseous taste, and act as a caustic upon animal tissue. The composition of the salt is $CuO, SO_3 + 5HO$ = sulphuric acid 32.1, oxide of copper 31.8, water 36.1. Its hardness is 2.5, and sp. gr. 2.2. It is of use in dyeing and preparing certain green pigments; and in medicine it is employed as a tonic, emetic, astringent, escharotic, as a lotion for ulcers, &c.—The qualities of durability, malleability, ductility, &c., possessed by copper, render it well adapted for a great variety of useful purposes. Its disposition, moreover, to form alloys with other metals, for which it is particularly remarkable, causes it to be largely used for the production of numerous compounds; and thus it is made to perform the services of a great number of different metals possessing a variety of qualities. Uncombined with other substances, the most prominent uses of copper are for boilers and other vessels employed in distilling and culinary purposes; for the sheathing, bolts, and nails for ships, and, as practised in Sweden and Germany, and some other countries, for the coverings of houses. It is extensively made into tubular pipes for steam and other purposes, and is drawn out into wire, characterized by its toughness and flexibility. It is an excellent material for plates for engraving. Copper sheathing, by the galvanic action it excites in sea-water, is made to waste rapidly; but this action is found to protect it against the adherence of barnacles and other shellfish, which are disposed to attach themselves to its surface, and thus hinder the progress of the vessel. For this reason the remedy proposed by Sir Humphry Davy of attaching iron as a protector to the copper was given up, though it effected the purpose intended, of lessening the waste of copper. Having no effect upon the magnetic needle, copper is found to be the best material for the boxes and supports of this delicate instrument. As an alloy it is the principal ingredient in brass, bronze, bell metal, German silver, Chinese gongs, &c.; and in small proportion it is used to give hardness to silver coin and plate. A number of salts of copper are manufactured and employed in the arts as pigments, and to some extent also in medicine. The principal of these preparations are Scheele's green, a combination of arsenious acid and copper; Schweinfurt green, a compound of arsenite and acetate of copper; and verdigris, an acetate of copper of the composition, when prepared by dissolving protoxide of copper in acetic acid, represented by the formula $CuO, C_4H_3O_3 + HO$; it is then in beautiful green crystals. This salt is quite another compound from the green hydrocarbonate or rust which forms upon the outside of metallic copper by exposure to moisture. The latter is artificially prepared in large quantities in the south of France, by packing sheets of copper in layers with the refuse of the grape, and leaving them thus for a month or 6 weeks. The plates are then found to be coated with verdigris, which is scraped off in the consistency of a paste. This, after being thoroughly beaten together and dried in the sun, is packed in leathern bags and exported. It is obtained almost wholly from Bordeaux and Marseilles. Even when uncontaminated with foreign matters, it is not of uniform composition, but a variable mixture of the subacetates of copper. In England it is prepared by exposing sheets of copper in alternating layers with woollen cloths, moistened with pyroligneous acid, to heat in ovens. Blue verditer is a carbonate used as a pigment, and prepared by decomposing sulphate of copper in solution by adding carbonate of soda in excess. The precipitate is at first blue, but changes to green. Its formula is then $CuO,CO_2 + CuO, HO$. Brunswick green is a compound of chloride and oxide of copper.—The poisonous qualities of the salts of copper require that they should be used with caution, and care should be especially taken with culinary vessels of this metal, that they are not exposed to the action of vinegar or other acids.

COPPER MINES. The mines which supply the copper of commerce are situated in almost all parts of the world, and a large proportion of them are worked by English companies, and made tributary to the great smelting establishments at Swansea, in South Wales. The high percentage and great value of many of the ores of this metal admit of their transportation from the interior of distant countries to the coast, and thence by ships to those places where they can be most economically reduced. The American smelting works located upon the Atlantic coast, as those at Boston, Bergen near New York, and Baltimore, are mostly supplied with ores from foreign mines. The geological formations in which copper mines are found productive are, for the most part, the group of metamorphic and igneous rocks, as the mica, talcose, argillaceous, and hornblende slates, quartz rock, and the granite, gneiss, and porphyry, which together make the greater portion of the principal mountain ranges of the world. It is on the range of these formations that many copper mines are worked on the Andes, particularly Chili and Peru; and the many localities of these ores in the Cordilleras of Central America and Mexico are in the same groups of rocks. Granitic rocks and slates make up the great mining district of Cornwall; and their counterparts are met with in the far-off mines of Australia. Along the Appalachians, the same formations are again found productive of the same ores. In New Hampshire and Vermont, Virginia, North Carolina, and Tennessee, the same rocks produce the same metals, as trees yield their appropriate fruits. The mountains of the island of Jamaica are of similar character, and in these, too, copper mines are worked. Cuba produces its copper ores in rocks of serpentine, and veins also are found and worked in the metamorphic quartz rock. At Lake Superior mines of metallic copper are in trap rock, near its contact with the sandstone of the lowest stratified sandstones and conglomerates, into which the veins also penetrate. On the Canadian shore ores of the metal are met with in the slates, sandstones, and quartz rock of the oldest stratified formations, and also in the porphyritic trap and sienitic rocks in contact with them. In formations of later date, copper ores have likewise been met with, but never found so productive. The silurian limestones of the western states contain them in connection with the lead ores, sometimes, as in Wisconsin, where no plutonic rocks are found; and again, as in Missouri, on the line of contact with the granite. The hard Shawangunk grit of Ulster co., N. Y., has produced rich ores of both copper and lead. In Connecticut, New Jersey, Pennsylvania, and Maryland, many copper mines have been worked in the red slates and sandstones, either of the new red sandstone or lower oolite formation, one class of them near the contact of the stratified rocks with the trap, as in New Jersey, and another class at the junction of these rocks with the granitic and metamorphic rocks, as at the Bristol mine in Connecticut, and the mines of Chester county, Penn. In Europe, a noted locality of copper mines in stratified rocks more recent than the coal formation, is at Mansfeld, in Thuringia, where the slates of the permian or magnesian limestone formation have long been extensively worked for the 2 or 3 per cent. of copper disseminated through them in the gray argentiferous ore. A stratum of bituminous slate, not exceeding a yard in thickness, is the ore-bearing rock, and itself supplies, in the carbon it contains, a portion of the fuel for the metallurgic treatment of the ore. Norway, Sweden, Spain, Italy, and Turkey produce more or less copper. The production of Austria, principally from the mines of Hungary, is estimated at about 3,300 tons of metal annually. The mines of the Ural mountains in 1850 were estimated to have produced over 5,400 tons of copper, while the production of the whole Russian empire is rated for the same year at 6,449 tons. Of the mines of Asia little is known. Japan and China produce copper, and it is also obtained from the coast of Africa. The production of the world, and the proportion furnished by each country, are approximately presented in the following table for the years named:

TOTAL PRODUCTION OF COPPER.

Countries.	1830.		1840.		1850.		1853.	
	Tons.	Proportion.	Tons.	Proportion.	Tons.	Proportion.	Tons.	Proportion.
Russian empire.	3,800	14.9	4,600	11.2	6,450	11.8	6,500	11.7
Scandinavia	1,500	5.9	1,500	3.7	2,000	3.7	2,000	3.6
Great Britain....	13,200	51.7	13,000	31.7	14,700	26.8	14,500	26.0
German states..	1,100	4.3	1,250	3.1	1,400	2.6	1,450	2.6
Austrian empire	2,150	8.4	2,650	6.5	3,300	6.0	3,300	5.9
Rest of Europe.	500	2.0	700	1.7	1,000	1.8	1,000	1.8
Turkey	500	2.0	1,000	2.4	1,000	1.8	600	1.1
Africa	....	..	100	.2	600	1.1	600	1.1
Asia	2,500	9.8	2,500	6.1	3,000	5.4	3,000	5.4
Australia and New Zealand.	....	..	....	..	3,500	6.4	2,950	5.3
Chili	200	00.8	9,000	22.0	12,500	22.9	14,000	25.1
Rest of S. Amer.	....	..	100	.2	1,200	2.2	1,300	2.3
Cuba............	....	..	4,500	11.0	3,400	6.8	2,500	4.5
U. S. and Canada	50	00.2	100	.2	650	1.2	2,000	3.6
Totals......	25,500		41,000		54,700		55,700	

—Great Britain exceeds all other countries in the number of copper mines and value of their products. Nearly all these mines are found grouped together in the long projecting south-western point of the island, which constitutes the counties of Cornwall and Devon. Their number, as given by Muspratt, is 136; in Cumberland there are 27; in Wales 7 or 8; and the same in Ireland. Cornwall was for many centuries celebrated for the production of tin, before the value of the copper ores found with those of tin was suspected. In 1757 the mine called Huel Virgin (now a part of the consolidated mines) produced in 2 weeks, at a cost of £100, copper ores which sold for £5,700; and in the next 23 days as much as sold for £9,600, at little more proportional cost. From 1744 to 1758 the copper ore of Cornwall is stated by De la Bèche, on the authority of Borlase's history of Cornwall of the latter date, to have "produced each one year with another to the amount of £160,000." By others, the average annual value of this period is put at about £100,000. At this time the pyritous ore, which Borlase states was thrown away at the beginning of the century, was valued at from £10 to £20 per ton. The production continued rapidly to increase, till in 1800 it amounted to 55,981 tons of ore, which produced 5,187 tons of metal, worth £[illegible]. In 1805, 78,452 tons of ore produced 6,234 tons of copper, worth £862,410; and though in subsequent years larger quantities of equally rich ore were produced, the same value was not reached until 1834, when 143,296 tons of ore produced 11,224 tons of copper, worth £[illegible]902. The following table is from the work referred to of Messrs. Phillips and Darlington, the data for 1856 and 1857 being furnished from other sources:

PRODUCTION OF COPPER IN GREAT BRITAIN.

	Mines situated in Cornwall and Devon.				Other mines in the United Kingdom.			Amount.		
Years.	Ore, tons.	Copper, tons.	Value in £.	Product.	Ore, tons.	Copper, tons.	Value in £.	Ore, tons.	Copper, tons.	Value in £.
1846....	150,431	11,850	796,182	7⅞	19,311	1,543	112,245	169,742	13,393	[illegible]
1847....	155,985	12,754	889,287	8⅛	15,218	1,385	106,912	171,203	14,139	[illegible]
1848....	147,701	12,422	720,090	8⅜	13,317	1,186	75,492	161,018	13,608	[illegible]
1849....	146,326	11,684	763,615	8	10,779	986	72,937	157,105	12,670	[illegible]
1850....	155,025	12,253	778,224	7⅞	11,966	1,061	76,725	166,991	13,314	[illegible]
1851....	150,380	11,807	782,947	7¾	11,451	1,107	83,133	161,831	12,914	[illegible]
1852....	165,593	11,776	975,975	7⅛	11,604	1,092	100,858	177,197	12,868	[illegible]
1853....	181,944	11,918	1,155,167	6½	12,749	1,224	126,243	194,693	13,137	[illegible]
1854....	187,103	11,964	1,192,839	6⅝	12,026	1,149	130,064	199,129	13,113	[illegible]
1855....	195,193	12,578	1,263,739	6¾	14,921	1,276	136,918	210,114	13,854	[illegible]
1856....	209,305	13,275	1,283,639	6³⁄₁₀	....	....	....	....	....	....
1857....	289,768	18,915	1,816,644	6⁵⁄₁₀	....	....	....	....	....	....

Average percentage produce of mines in Cornwall and Devon for 10 years, 7½; other mines, 8⅝. Increase in value, 54 per cent. Average monthly rate of wages per miner, 1855, in Devonshire, £3 7*s.*; in Cornwall, £3 6*s.* The copper and tin ores of Cornwall are found in the south-western part of the county, below Truro. Other ores, as lead, zinc, antimony, manganese, &c., prevail in Devonshire and in the portion of Cornwall adjacent to this county. The copper and tin occur together in the same veins; but the mines of any one district of the copper region are usually distinguished for the prevalence of one or the other ore. Sometimes, however, a mine that has been worked for tin proves in depth more productive in copper. The metamorphic slates and ancient sandstones and conglomerates which make up the principal portion of this region, are interrupted by several granitic patches which form ridges and hills of no very considerable elevation. They may be regarded as making a broken central axis of the country, the course of which is N. E. and S. W. Granite and porphyry also appear in long dikes, which traverse the district in a general E. and W. direction, and are known as *elvans.* It is only in these elvans and the granite hills, or the schistose rocks (*killas*), where these are in close proximity to the granite or the porphyry, that productive veins of copper and tin ores are found. The general direction of the veins is like that of the elvans, but the former often penetrate the latter in direction as well as in dip. In some districts the veins deviate to W. N. W., E. S. E., and in others to E. N. E., W. S. W. The last is the direction of the copper lodes near Redruth, coinciding with the range of granite hills. Another set of veins, unproductive in copper or tin, but containing ores of lead and zinc of little value, cross the richer set at angles varying from [illegible] to 90°. The copper veins consist principally of quartz. Through this gangue the principal ore, pyritous copper, is diffused in very variable proportions, accompanied by small quantities of gray ore, red oxide, and native copper. Brown hematite, fragments of the wall, and clay are always component parts of the lode; the last is often interposed between the vein and the wall on one side, and then passing through the vein occupies a corresponding place on the other side. Iron pyrites, arsenical iron, oxide of tin, and blende are commonly associated with the copper ores. Where the veins are rotten and filled principally with gossan (a ferruginous earth resulting from the decomposition of the sulphurets), these give place to oxides of copper, the carbonates and arseniates. Upon the back of the vein (the portion near the surface), the gossan is often found in large quantities, and it is always carefully examined in exploring new mines to detect in it the ores that have resulted from the decomposition of the lode, and thus obtain some evidence of its quality. The veins show great irregularities of size and production, commonly increasing in richness to a certain depth, and then sometimes falling off, and sometimes continuing productive as deep as they may be worked. The crossing of 2 veins, even if one of them be of the poorer class, has the effect of increasing the product of the lodes near the line of contact, particularly if the crossing is at an oblique angle. In killas of light color the veins are thought to be richer than when this is red or dark. The character of the wall rocks is carefully observed, as having some fixed relation to the productiveness of the veins. When the veins are rich in one rock, they cease to be so, with the same ore, in passing out of this into another rock. Their general thickness is from 3 to 6 feet, but they often exceed the latter figure and fall short of the former, being subject to swell out and to contract; to enlarge by the concentration of different veins into one, and to diminish by the splitting and branching of a main lode into several small ones. A single line of veins ("united mines") has been followed over 5 miles in length. The deepest workings, at the time of the visit of the writer in 1851, were at the Tresavean mine, Redruth, 333 fathoms (1,998 feet) below the surface. The vein-stuff brought up the shafts is often so poor that it would be worthless but for the economical methods adopted for dressing it. By the labor of children, whose total wages in 1851 were only from 3*d.* to 4*d.* per day each, the stones are broken up and sorted as they come to the surface; and thus material is turned to account, of which it takes several hundred tons to make a ton of copper. An experiment of this kind was in progress at the Tywarnhaile mine in 1851, where a vast amount of poor ore, much of it running at 500 tons to the ton of copper, was cheaply obtained, the dressing of which gave employment to 408 girls, women, and small boys. At all the mines the poorer ores, that are considered worth the labor, are dressed and sorted by hand, and concentrated by various mechanical operations, till a product is obtained of 6 to 8 per cent. The machinery employed in these processes, as well as that for draining the mines, can nowhere else be seen exhibited upon so large a scale, constructed in such variety, and working so efficiently. A short statement of the immense profits of some of the most successful of these mines will afford an opportunity of comparison with the successful adventures of the same class in the recently developed copper region of Lake Superior, an account of which will be afterward given. It is, however, to be borne in mind that these instances are prominent exceptions, like prizes in a lottery, which are largely outnumbered by blanks and losses. The "great consolidated mines," and the "Devon consols," are especially prominent. In the former the profits from 1819 to 1840 were £600,000, beside £100,000 expended in opening the united mines. The value of the product of the last named year was £100,279. In the next 8 years the expenses had greatly increased in proportion to the product, and only £82,000 was in this time divided among shareholders; and from 1851 to 1854 no dividends were declared. The workings in 1848 had reached an aggregate length of 68 miles. The "Devon great consolidated company," in 1844, had paid in £1 per share on 1,024 shares. In the first 8 months of regular working upon the lode, the mine cleared over £15,000; in 1846, £89,590. In January, 1852, the dividends amounted to £858 per share, and each share was worth £480, about which sum it is still rated. The rich portion of this mine was reached at the depth of 105 feet. Above this the vein was made up of gossan, which, at 84 feet depth, spread out to 18 feet in width. In 1850 10 shafts were worked, of which the deepest was 600 feet. The number of persons then employed about the mine was about 1,000. The Wheal Buller has also proved one of the most profitable mines, its shares, originally costing £5 each, being worth in 1853 £1,025. The principal mine of Australia may also be cited as an instance of the occasional wonderful productiveness of these mines. The working of the Burra Burra mine commenced Sept. 5, 1845. Up to Sept. 1850, the total produce had been 56,428 tons, averaging 40 per cent. of copper, and worth £738,108. The range of the metallic yield of the ores was from 30 to 70 per cent. In April, 1850, the whole amount of capital paid in was only £12,320, while the dividends from June, 1847, to March, 1850, had been £172,480. None of the dividends were less than 50 per cent. upon the capital, and some were at the rate of 200 per cent. The sum of £99,779 remaining undivided, the total profits amounted to £272,259; or in 5 years 19 times the whole capital invested.—The copper region of Lake Superior contains almost the only mines of this metal that are profitably worked in the United States. Before the extinction of the Indian title, effected by the treaty of 1842, this was a remote and almost inaccessible district, known only to the fur traders and hunters. The existence of masses of native copper had been known for nearly 200 years, and in the last century one or two unsuccessful attempts had been made by English explorers to open veins of the metal. In 1844 the country began to be rapidly taken up by adventurers from the eastern states, and mining operations were at this time commenced. The productive region was already indicated by the researches of Dr. Douglass Houghton, the state geologist, as limited to the range of the trap hills, which commence at the coast on Keweenaw Point, and gradually recede from it in a southwesterly direction in a belt only about 2 miles wide. These hills are formed of trap rock, which lies in alternating layers with the sandstones and conglomerates of the Cambrian formation. The strata dip toward the north, and disappear beneath the lake. On Isle Royale, 45 miles north, a similar group emerges from the lake, and forms the narrow belt of hills which extend along its centre. Thus the lake appears to be a basin in these ancient strata. From Keweenaw Point the trap hills, in 2 or sometimes 3 parallel ridges of 500 to 1,000 feet elevation, extend westward, crossing the Ontonagon river in 80 m., and stretching full 40 m. further toward the Mississippi river. Other trap formations presenting similar features are also met with, and are known to contain copper; but the mines now worked are on this narrow belt. The trap rock of Keweenaw Point is distinguished for the different qualities of its layers. Some are amygdaloidal, and one variety which forms the summit of the principal ridge, and abuts in precipitous cliffs on its southern side, is a close compact rock, unproductive in copper. The veins cross these formations in lines nearly at right angles to their course, and they are for the most part nearly vertical. The direction of the principal veins in the vicinity of Eagle river is from 24° to 26° W. of N., E. of S. The productiveness is almost limited to their passage through the amygdaloidal layers of trap, and the most profitable workings, as of the Cliff mine, belonging to the Pittsburg and Boston company, and of other works along the same range, have been in one particular belt of this variety of trap, which crops out from beneath the principal ridge at its southern base. The workings consequently follow this belt as it dips at an angle of 39° 50′ beneath the ridge, and are limited in depth to its thickness, unless other productive belts are found succeeding to it. Many veins have been worked along this portion of the range, all which present the same general features, though none have furnished copper in sufficient quantities to reimburse the owners, except the one named, and one or possibly two others. The vein stone is principally quartz, and with this is found some calcareous spar, laumonite, prehnite, and a few other minerals. The copper occurs almost wholly in a metallic state; the few ores are rare specimens of no economical importance. It is diffused through the quartz vein stones in small particles, like gold in its matrix. This is separated by stamping and washing, and is known as stamp copper. The veins contain the metal also in lumps and masses of all sizes and shapes. These are freed as much as practicable, by roasting in ovens or in open heaps, from the vein stone attached to them, and the pieces that can be packed in barrels are called barrel work; the larger ones are masses. The occurrence of such is unprecedented in mining, as are indeed workable quantities of native copper in any form. The largest masses stand upon their edges in the vein, to the exclusion of all vein stones; they extend often many yards in length; their breadth is greater than the ordinary height of the levels, and their thickness varies from an inch to more than a yard. The masses succeed each other directly or with intervals of other qualities of vein. Silver is associated with the copper, found in occasional lumps which are sometimes unattached to the copper;

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Years.	Mineral produced, lbs.	Re
1853....	2,268,182	1,0
1854....	2,882,614	1,3
1855....	2,995,637	1,8
1856....	3,291,289	2,2
1857....	3,363,557	2,8
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mine in this district in the first 17 months of its working, from Oct. 1855, to March 1, 1857, is stated to be equal to $102,099. The produce of the district up to Nov. 1858, from January of the same year, was 853 tons; for the whole year it is believed to be 1,100 tons.—From Portage lake the veins continue of the same character toward the south-west; though at some of the mines of the Ontonagon district mass copper is found and profitably worked in the trap rock, where no sign of a vein appears. At the Adventure mine the steep cliffs of this rock are penetrated everywhere with drifts in search of a continuation of the lumps and masses that presented themselves upon the face of the rock. These were found to be arranged on courses of some regularity, and a succession of them is discovered by drifting in the solid trap in the direction in which they usually lie. Worked by tribute (on shares), this extraordinary kind of mineral repository has yielded profit year after year to the miners and owners.—The Minesota mine, situated on the northern trap ridge, 2 miles east of the Ontonagon river, and about 650 feet above it, is the great mine of this district, as the Cliff mine is of that of Keweenaw Point. Attention was first attracted to the locality in 1847–'48 by the long parallel lines of ancient trenches, which might be traced for miles along the ridges near their summit. These, like others of similar character in other parts of the copper region, were found to mark the outcrop of copper veins, which at some remote period had been worked by an unknown people. The excavations, when cleaned out, were found to reach sometimes 20 feet in depth. They even penetrated under rock cover, and left barren places of the vein in the open trenches, the drift forming arches over the drift beneath. Upon the rubbish that had partially filled the pits large trees had grown up. A hemlock standing by the side of a much older stump showed when cut over 350 distinct annual rings of growth. Buried several feet under its roots, and supported on skids of timber, was a mass of copper that had been worked free from the vein and cleared by fire of all the vein stone that had filled its interstices; ashes and charred wood were found about it; and it was plain that every attempt had been made to reduce its weight, without succeeding in this sufficiently to render its extraction practicable. Its weight proved to be over 6 tons. The tools of the ancient miners were found in immense numbers, consisting almost exclusively of hammers shaped out of the hard trap rock, with one sharp edge and a groove around them for withing on a handle. The edge of every one was broken, evidently in service. The veins, 3 in a group at the surface, lie parallel to each other on the south side of the ridge, dipping into this toward the north. The most southern of the three is between a stratum of conglomerate, which forms its foot wall, and the great body of gray trap of the ridge. The slope of this vein is 46°; its direction, N. 63° E., S. 63° W. The next one, from 80 to 90 feet north of it on the surface, dips 61°, and falls into the conglomerate vein along a very irregular line of level. Both these veins are worked, and the greatest yield of masses is found near their point of meeting, though these are by no means limited to this portion of the lodes. Nine shafts have been sunk, and the lowest level reached in the spring of 1858 is that called the 70 fathom below the adit, which is, measured down the slope, about 535 feet from the surface. Above this 8 other levels have been driven on the course of the main vein, beside others on the so-called conglomerate vein. The workings on each of the 5 upper levels on the main lode extend rather more than 1,800 feet in length. The longest is on the 10 fathom level, 1,960 feet. The masses are unprecedented in size, and on the south vein they are found spreading into the conglomerate, into which they have been traced a distance of 16 feet. The extraction of a single one of the enormous masses is sometimes the work of many months. As they fill the vein, the levels must be driven in the rock to one side, and the mass is then left as the hanging wall, its upper edge extending into the roof, and the lower edge into the floor. When a side is laid bare, it is attacked at one end by introducing charges of powder behind, and, as room is obtained, and cracks are opened between the copper and the rock, increasing the size of these charges. Sand blasts (see BLASTING) are then introduced of from 25 to 30 kegs (625 to 750 lbs.) of powder, and the mass at last is thrown partially over into the levels. The work of cutting it is then commenced upon its weakest points. Two miners strike in turn upon a long steel chisel held by a third, and thus gradually cut a groove ¾ of an inch wide acoss the copper. This work is repeated until the mass is cut through, a labor which sometimes continues nearly for a month to complete a single cut. Pieces weighing 6 or 7 tons are hoisted up the shafts, and upon the surface are further cut to more convenient sizes, as from 1 to 3 tons, for transportation. In January and February, 1857, an enormous mass was uncovered, upon which 1,450 lbs. of powder had been expended in 5 sand blasts without freeing it. Another charge of 625 lbs. placed under it had the effect at last of loosening it a little; so that a succeeding blast of 750 lbs. threw it over in one piece without bending or fracturing it, except where it was torn from other masses, of which it formed a part, and which were left behind in the walls. The detached mass measured 45 feet in length, and its greatest thickness was over 8 feet. It was estimated from its measurements to weigh about 500 tons. No exact account was preserved of the actual weight of the pieces into which it was cut; but they are known to have exceeded 400 tons. This mass copper commonly yields over 90 per cent. of metal; but the barrel work reduces the percentage of the whole products of the mine from 71 to 74 of ingot copper. Silver has been collected at this mine to the amount of more than $1,000 in a year. The reports of the company present the following statistics of this mine from its earliest operations:

Years.	No. of men empl'd.	Expenditure.	Mineral product, tons.	Percentage.	Value of copper.	Assessments paid.	Dividends paid.
1848	20	$14,000	6¼	..	$1,700	$10,500	....
1849	60	28,000	52	..	14,000	16,500	....
1850	90	58,000	103	..	29,000	36,000	....
1851	175	88,000	307¼	..	90,000	8,000	....
1852	212	108,000	520	..	196,000	....	$30,000
1853	280	168,000	523	..	210,000	....	60,000
1854	392	218,000	763	..	290,000	....	90,000
1855	471	280,933	1,434	71	549,876	....	200,000
1856	537	356,541	1,859	72¼	701,906	....	300,000
1857	615	402,588	2,058	74	736,000	....	300,000

Of the product of 1857, 3,015,581 lbs. were in masses, 819,900 lbs. in barrel work, and 280,512 lbs. of stamp stuff. For the year 1857 the directors estimate that of the assets $363,482 22 is strictly available. Of this a semi-annual dividend was paid of $120,000; and the second payment of $180,000 was made Nov. 1, 1858. Beside these dividends the original stockholders have realized large profits from the sale of portions of the extensive territory owned by the company, and the organization of new companies upon the tracts. One of these, the Rockland, which joins the Minesota on the east, in 1857 produced 374 tons, consisting of masses 419,839 lbs., barrel work 204,856 lbs., and stamp stuff 124,877 lbs.—The following statement is given by good authorities as the probable total shipments of rough copper from Lake Superior, in tons of 2,000 lbs.:

Districts.	1855.	1856.	1857.
Ontonagon	1,984	2,767	3,190
Portage Lake.	315	462	704
Koweenaw Point	2,245	2,128	2,200
Total	4,544	5,357	6,094

"Assuming the correctness of Mr. J. D. Whitney's estimates in 1854, the Lake Superior region had yielded pure copper, from the commencement of mining in 1845 to the close of 1854, in tons of 2,000 lbs., 7,642, to which we may add the aggregate of 1855, 1856, and 1857, including Nov. and Dec. 1857, product not shipped, and estimated at 888 tons additional, gives a total of 24,525 tons. This product, reduced to ingot copper at 67 per cent., is 16,432 tons, estimated at $500, gives the total value $8,216,000 to Jan. 1, 1858."—The Virginia copper-mining district is on the range of the Blue Ridge in Carroll, Floyd, and Grayson counties. Mines have been opened at other points further north in this state on the ridge, but they have not proved of much importance. The mines south of the James river were discovered about the year 1852 in a region of metamorphic slates, near their junction with the lowest limestones of the Appalachian group. The Virginia and Tennessee railroad passes from 17 to 25 miles to the north of the mines. A number of beds, at least 5, of metallic ores are here met with in one metalliferous belt, pursuing a general N. E. and S. W. direction, and dipping at a high angle toward the S. E. Their outcrop is marked by large bodies of gossan, which have the appearance and character of hematite iron ore. The beds of gossan vary in thickness, sometimes exceeding 100 feet. As they are penetrated in depth, the gossan is found to contain ores of copper, as the red oxide, pyritous, and black copper. Quartz also makes its appearance as a matrix of the ores. The workable portion of the beds forms a lode of itself, and is worked along the general range of the formation. The gossan in depth gives place to pyritous ore, abounding in mundic (iron pyrites) and containing yellow and gray ore. It is stated that 12 or 14 mines have been put in operation, and that the shipments to the east have yielded over 20 per cent. of copper—the average shipment from one of the mines, 26.43 per cent. All the products are sent over the Virginia and Tennessee railroad, and the reports of the company show the amount thus sent in 1855 to have been 1,931,408 lbs.; in 1856, 1,972,834; and in the 9 months making the fiscal year ending June [illegible], 1857, 1,085,997 lbs.—In North Carolina, pyritous copper ores are found in almost all the gold mines. They are, however, rarely abundant and rich enough to pay the expenses of extraction and of transportation to market. When those expenses are reduced, these mines will probably prove a permanent source of profit to the state. The Fentriss mine in Guilford co. has continued to send ore to the east since it was first worked for copper in 1852. The veins are quartz more or less filled with the yellow copper and iron pyrites, which make their appearance in the lodes below the level of the water in the mines.—The Tennessee copper region is in Polk co., along the line of Gilmer co., Georgia, which is crossed by the veins. These are of similar character to those of Virginia—7 or 8 parallel beds in a metalliferous belt, ranging with the metamorphic slates and dipping with them at a high angle toward the S. E. The outcrop of the veins is designated in places by great ledges of hematite, which project above the surface, and again by bodies of ochreous matters, which range with the strata in belts sometimes 100 feet wide. These are traced several miles in length in the two states of Tennessee and Georgia. The ferruginous character of the lodes led them to be first worked for iron; and the difficulties encountered in reducing the ores caused an examination to be made of their qualities, which led to the discovery of copper. This was about the year 1847. It is also said that red oxide of copper was detected in 1843 in washing for gold. Copper mining was commenced in [illegible], and many companies were soon actively engaged in it. The productive ore was found near the level at which water was struck, from 75 to 100 feet below the surface on the high lands and much nearer in the valleys. This ore was a peculiar mixture of decomposed pyritous copper, with some red oxide and other ores intermixed, together with ochreous matters, the whole forming a soft black mass, easily

excavated with the pick, and of various proportions of copper. As shipped, the yield has averaged about 20 per cent., though some parcels are much richer. The distribution of this variety of ore was very irregular in the different mines, though in all it was limited to a few
n depth, except when it occasionally form-
re bunches running up into the gossan or
In some of the mines, as the Eureka,
ad out in a sheet over 50 feet in width,
m the Hiwassee it has been found 45 feet
e. The material was easily extracted, and
s of ore were rapidly made from the
mines. As this variety of ore was ex-
ed, the dependence was upon the poorer
nore expensively obtained pyritous ore of
quartz lodes, which succeed below the de-
osed portion. The produce of a number
principal mines up to the year 1858 is
given by Mr. Samuel Congdon, under
direction five of them have been since
were opened: "Isabella, 2,500 tons;
ay, 200; Mary's, 1,500; Polk co., 2,100;
see, 2,200; Hiwassee, 2,500; Hancock,
total, 13,000 tons; average gross value,
0 per ton, $1,300,000; from 15 to 40 per
produce. Also above 5,000 tons of ore
g from 5 to 15 per cent., and worth if
d $200,000. In 1858, 850 tons of matte
regulus have been obtained from the furnaces
cted at the mines to reduce the ores after
rman plan of smelting. The shipments
Eureka mine for the year ending March
7, are stated at 485 tons of 28 per cent.
; tons of regulus from the furnace of
company, averaging 50 per cent., and 3,766
of ingot copper. The value of the products
1855 was $86,000; 1856, $123,000; 1857,
6,000; and for 1858, estimated at $150,000."
products of the London mine have aver-
d 45 per cent., and have amounted to over
.000 in value. The land carriage of 40
to a railroad, and the great cost of trans-
ation to the coast, and thence to the north-
smelting works and market, have deducted
ly from the profits of these mines; yet the
ct may still be regarded as the only one of
ch importance in copper mining in the United
except that of Lake Superior. The
value of its products is now greatly increased by the furnaces established by the Eureka and other companies. Those of the Eureka are 4 reverberatories for smelting, 2 calcining furnaces, and 2 blast furnaces. Wood and charcoal are employed as fuel; and ores of 8 per cent. copper can now be profitably worked in the reverberatories, or 5 to 6 per cent. ores in the blast furnaces.—The copper mines of the red sandstone of the eastern states have been worked at various times since the first discovery of copper at Belleville, New Jersey, in 1719. At this locality, 6 miles from New York city, known as the Schuyler mine, copper ores were raised and sent to England before the year 1731, to the amount of 1,386 tons. Various companies have been engaged here at different periods since that time, but for the most part without profit. The ores are a rich vitreous copper and chrysocolla, disseminated through a stratum of light brown sandstone, of 20 to 30 feet thickness, dipping at an angle of 12°. Small strings and occasional bunches of pure vitreous ore are met with; but they are insufficient in quantity to pay the expenses of extraction. If the mine is ever made profitable, it will be by the application upon a large scale of cheap methods of crushing and washing the sandstone with which the ore is mixed. The workings reached many years ago the depth of more than 200 feet; but the only metallic repository met with was the ore-bearing stratum of sandstone. Operations were in progress in 1857-'58, with the view of testing the sandstone with improved machinery for dressing the rock. Should it yield 1 per cent. of copper, its extraction ought to be profitable. The other mines of New Jersey have also failed for want of regular veins of ore. All of them contain the richest varieties, but in insufficient quantities.—The Bristol mine in Connecticut has probably furnished more rich sulphurous ores, as vitreous copper and the other varieties, than any other mine in the United States. It was opened in the year 1836 in the hornblende and micaceous slates and gneiss rock, along their line of contact with the sandstone formation; and after the year 1847 mining operations were vigorously prosecuted, since which time full 1,800 tons have been sent to market, of ores ranging from 18 to 50 per cent. of copper. The ores occurred very irregularly diffused in strings and bunches, and though when found they were easily dressed to yield a high percentage, they failed to pay the cost of extraction; and after the expenditure of large amounts of money, the workings were abandoned in 1857. Other mines of somewhat similar character, along the range of these formations in Connecticut, have all likewise been given up.

COPPER SMELTING. The reduction of copper ores is for the most part conducted at points on the sea-coast, where fuel is cheap, and near the markets for copper rather than the mines. The products of the latter, when dressed by mechanical preparation to their most profitable percentage, are advantageously transported, even from one hemisphere to the other. The operations also are better conducted by the control of varieties of ores for mixture. The great smelting establishments of the world are those at Swansea, South Wales, near anthracite mines, not far from the numerous copper mines of Cornwall and Devon, and supplied by ships with the rich ores of Australia, Chili, Cuba, &c. The amount and percentage of the domestic ores are given in tabular form in the preceding article; the foreign ores are estimated at 60,000 tons, yielding 10,000 tons of metal. Upon our own coast a number of comparatively small establishments have been for years in operation, supplied also with ores mostly from abroad. These are the furnaces of the Revere copper company at Point Shirley, in Boston harbor; those at New Haven, Conn.; those on Bergen Point, N. J., opposite Staten island; and the furnaces on the outer shore of Baltimore harbor. The location of these works was selected with reference to convenience of supplies by sea of ores and fuel, and also to their remoteness from dwellings to which the gases evolved in the process would be noxious. In the interior of the country the melting down and refining of the native copper of Lake Superior is conducted at furnaces at Detroit, Mich.; Cleveland, Ohio; and Pittsburg, Penn. At the copper mines in the lead region of Wisconsin and Missouri, small blast furnaces and some reverberatories have been employed for partially smelting by one operation the poor ores, that the copper they contained might be concentrated and saved, if not in pigs of metal, at least in a condition to pay the cost of transportation.—The reduction of copper ores is variously accomplished at the smelting establishments in different parts of the world, the practice in each conforming in part to the peculiar qualities of the ores or fixed by long habit. The process of smelting the Lake Superior ores is the simplest of all the operations of this class. The furnaces employed are reverberatories, built with especial reference to the capacity of taking in through the top, by an aperture that may be securely closed, the huge masses of metal reduced into pieces not exceeding 3 or 3½ tons in weight. The barrels of fragments, called barrel work, are introduced without unpacking into the same aperture. Bituminous coal is used as fuel, and the masses gradually sink down under the intense heat of the flame, the slag produced by the stony matters floating upon the surface of the liquid copper. The stony matters, being principally quartz, intermixed with some calcareous spar, and frequently with much epidote, readily melt, or are made to do so by the addition of more calcareous matter as a flux. By means of working tools called rabbles, introduced through doors in the sides of the furnace, the slags are drawn out, bringing with them more or less copper intermixed in the form of small shot. To recover this the slags are passed a second time through the furnace; and it is considered unprofitable to finally reject any that contain so much as ½ per cent. of metal. On exposure to the air the melted copper is injured by absorbing some oxygen. This is expelled by covering it with fine charcoal and stirring according to the ancient practice with poles of green wood, commonly of birch. The oxygen leaves the copper for the carbon of the wood, and escapes in the form of carbonic acid gas. A second furnace is sometimes employed, especially for working the slags. The whole cost of smelting and refining is estimated not to exceed $14 or $15 per ton of copper produced from 75 per cent. material. —The Welsh smelters, by whom more than half of the world's product of metallic copper is prepared, pursue a long and tedious succession of operations, adapted to the poor qualities of ore which form ¾ of their supplies. The ores are sorted in the yard for convenience at all times of selecting the peculiar qualities required. One division comprises ores, as the carbonates and oxides, which contain no sulphur. The ores of the other heaps are sulphurous; in some heaps they are known to contain ingredients, as arsenic, tin, &c., which are separated with difficulty, and tend to injure the copper. The approximate quantity of iron pyrites present is known, and the nature of the gangue also. The mixture with which the operations commence consists of pyritous ores of 9 to 13 per cent. of copper. The sulphur, iron, and quartz gangue they contain are to be removed, and the agencies for effecting this are the chemical affinities called into play among these ingredients and the oxygen of the air by the aid of the regulated furnace heat. The 1st process is calcination in a reverberatory furnace, the only class of furnace used in these operations. A charge of finely broken ore is introduced through the roof of the furnace by two stationary hoppers, which are immediately tightly secured. Some furnaces are large enough to take 6 tons at once, the charge when spread out forming a layer over the floor 6 to 8 inches deep. The gaseous products of combustion from an anthracite fire pass over the bridge, and reverberate from the roof down upon the ore; they are kept in ignition along the lower surface of the current by jets of air drawn in through small apertures made in the hollow bridge and in the side door of the furnace. The air also affords oxygen for decomposing the heated pyrites; their sulphur begins to escape in sulphurous acid vapors, and some is in a free state; and their iron is partially oxidized and prepared to unite, when exposed to higher temperature, with the silica of the gangue; the copper also is to some extent oxidized. The management of the fire requires skill to avoid, at first especially, a high heat, which would melt the ores, rendering the combination of their ingredients more tenacious than ever. An occasional raking over of the layer through the doors, which are then opened for the purpose, is necessary to expose all portions alike to the action of the flame. After some hours the ores are less disposed to fuse and agglutinate, and the heat is then increased with safety. In about 12 hours the charge is let out through openings in the floor into the "cubs" beneath, and a new charge is immediately introduced in its place. The red-hot ores, still emitting sulphurous and it may be arsenical fumes also, fill the air with noxious vapors, half suffocating the workmen. During the calcination these fumes were carried up the chimney, and dispersed in the atmosphere without. Beside the products of combustion of the coal, they consist mainly of sulphurous acid gas; some sulphuric acid is also present, generated by the combination of sulphurous acid with the moisture expelled from the ores and fuel. With these are mixed arsenical vapors, volatile compounds of fluorine formed from the fluor spar associated with some of the ores, and the light dust of the materials employed. It is estimated that in the furnaces of Swansea full 200,000 tons of ores are annually smelted, containing about 46,000 tons of sulphur, which produce over 90,000 tons of sulphurous and sulphuric acid. Every day about 188 tons of these noxious acids are spread over the surrounding country, filling the air with a dense white cloud and destroying the vegetation upon which it settles. Where the grass can grow in the vicinity, the cattle and sheep that feed upon it are curiously affected with enlarged joints, and their teeth become covered with a metallic coating. Attempts have been made to condense the vapors for the sake both of saving their ingredients and avoiding a serious nuisance; but these have proved ineffectual from the draught of the furnaces being too much reduced by the methods adopted to cool the fumes; and high chimneys were found only to spread them over larger districts.—The ore when cooled is ready for the 2d process, which is one of fusion. The furnace employed is smaller than that used for the calcination. Other substances are also introduced to facilitate the fusion or add to the percentage of copper. They may be a small proportion of rich ore, containing little if any pyrites or substances injurious to the quality of the copper; sometimes, also, a little fluor spar as a flux; but always rich slags from more advanced operations, and fragments of old bricks and bottoms of furnaces, called cobbing, which have absorbed copper. In a charge of 2 tons, about 1½ tons are calcined ore. Some bituminous coal is added to the fuel to cause more flame and available heat. The charge, according to its quantity, is left, after the furnace is tightly closed, from 3½ to 5 hours undisturbed. It attains a white heat and melts. A scoria of oxide of iron, combined with silica, floats upon the surface of the combined copper and sulphur fluid. This is skimmed off by long rakes, and usually more ore is added, and the surface is again skimmed. The metal, now called a matte, is allowed to flow through an opening at the bottom of the hearth, and is collected in a perforated vessel placed in a tank of water, into which it falls and is granulated. This substance, called granulated coarse metal, is brittle, of deep brown color without, and brownish red when freshly broken. It contains about 32 per cent. of copper, 27 of sulphur, and 41 of iron, a composition similar to that of copper pyrites free from gangue. The slags which flow out in a melted state are collected in moulds in the sand. As the cakes cool they are broken up and examined, and those that contain sufficient copper to justify their being worked over, are saved for this purpose. Much experience and skill are required to produce slags of proper fluidity, through which the particles of copper can find their way; and when changes are made in the materials employed, quantitative analyses are often required to indicate the due proportions of these materials, and also the kind and quantity of flux wanted. The furnace is managed by 2 men in 12 hour shifts, and is in continual operation from Monday morning till Saturday night; during Sunday the fire is kept up, but no ore is charged. The refuse slags have accumulated about the works at Swansea, till they now form considerable hills, and the disposition of them has become a large item of expense. Portions are got rid of by moulding them into slabs, bricks, and tiles, and using them in building. They retain somewhat less than ½ per cent. of the whole copper belonging to the ores.—The 3d process is the calcination of the coarse metal, a similar one to the first. The charge is 3½ to 4 tons. Great care is required to avoid melting the matte. A red heat is kept up, and the rabbling is thoroughly repeated under inspection every 2 hours. The operation may last 24 or even 36 hours. The product is then let down through the bottom. It differs in composition from the material charged in the loss of about ½ the sulphur; the weight of this, however, is compensated by that of the oxygen taken up by the iron. The following is the approximate composition of the compound: copper 33 per cent., iron 33, sulphur 18, oxygen, &c., 16. The metal is in fragments of small size, of black color, reflecting brownish hues.—The 4th operation is fusing the calcined coarse metal, with which may be mixed scoriæ of succeeding operations, copper scales and waste of various kinds, beside the silicious waste matters from the floor and walls of the furnaces. If rich ores are at hand that contain no sulphuret of iron, they are advantageously employed at this time to form nearly ½ the charge. The mixture is empirical, and its quality is judged of by the success of the first trial. Men of experience and good judgment are required to conduct the trial, and to vary the mixtures according to the indications. With the use of rich ores the product sought for is the nearest approach possible to a pure subsulphuret of copper. The iron being oxidized is brought into the condition favorable for its removal by combining with the silica present, and thus separating in silicious slags from the copper. These, however, take up more or less of the oxide of this metal; and after being received in moulds and cooled they are divided into 2 lots, the poor being treated again in the 2d operation, and the rich going to the 6th. The charges melt down in 3 to 4 hours; the mixture is then rabbled, and the substances adhering to the sides are struck off, so as to mix with the rest. The fusion is continued to about 6 hours, when the metal is run out either into moulds in the sand for cakes, or into water to be granulated. The metallic product is of variable character according to the quality of the charges. With rich ores it may be the "pimpled" metal, commonly containing 78 per cent. of copper, 18 of sulphur, 2 of iron, and 2 of silica. It is sometimes called white metal, consisting of 73 per cent. of copper, 20.5 of sulphur, and 6.5 of iron; or if no rich ores are used, it is called blue metal, and contains 58.8 of copper, 20.5 of sulphur, 12.6 of iron, 4.2 of insoluble matter, and 3.9 of oxygen, &c. The next treatment to which this is subjected is usually described as the 9th operation, there being several processes introduced in the general descriptions of copper smelting as intermediate between these, and which furnish similar products to that of the 4th for the roasting of the 9th. These intermediate operations consist in the treatment of rich ores previously calcined, and slags which contain no ingredient that can badly affect the quality of the copper.—The 5th is a smelting process, and its product is called blue metal from its beautiful shades of blue. Metallic copper in fine particles may always be observed disseminated through it. It is designed for the 7th operation, and the scoria produced goes to the 2d.—The 6th process is the treatment of the slags from the 4th, 7th, and 8th. To these are added ores containing pure sulphurets of copper and iron, the sulphur of which unites with the oxygen of the oxide of copper in the slags, and the partial reduction is aided by introducing carbon in the form of fine coal into the charge. Two metallic layers form at the bottom of the melted materials, the lower an impure black copper, called bottoms, and the upper a matte of white and red metal, called hard metal. The former gathers with it the reduced tin, arsenic, cobalt, and nickel; and the cupreous matte, still retaining sulphur and iron in combination, is thus freed from these injurious elements, which in a metallic state find their way through it to the copper below. The so-called white metal and red metal of the matte are designed for the 8th operation.—The 7th process is a calcination succeeded by a fusion in the same furnace of the blocks of blue metal of the 5th process. These are carefully introduced by long shovels, handled by 4 persons, to the amount of 2 tons to a charge, and the only other material is the moulding sand adhering to them. A portion of the sulphur is roasted out, and the iron in the subsequent fusion forms a ferruginous silicate with the sand and other silicious matter furnished by the walls of the furnace. The products are white metal for the next operation, poor slag for the 2d, rich slag for the 6th, and furnace waste for the 4th.—The 8th process is almost a repetition of the last, performed on richer materials, as the white metal of the 7th and 6th and the red metal of the 6th process. It furnishes slag containing oxide of iron and copper, which go back to the 6th process; a matte or regulus containing about 81.1 per cent. of copper, 0.2 per cent. of iron, and 18.5 per cent. of sulphur; lastly, copper bottoms, consisting of small scales or plates of dull red color.—The 9th operation brings together the rich products of the 4th, 8th, and other intermediate processes, which may now be treated together or separately, the object being to entirely remove the sulphur, which so far has been gradually disappearing, as it was taken up by the oxygen of the air, or served to abstract that of the oxidized copper. The same reactions are called in play in this process, which does not differ essentially from the preceding. The sulphur is removed by the strong currents of air allowed to play through the furnace: the oxide of copper produced and the sulphuret of the same metal react upon and decompose each other; the oxide of iron goes to the silica introduced with the charge in the form of quartz, and produces a slag, which for the sake of the metal and oxide of copper it absorbs is taken back to the 4th process, and crude copper is separated, which after the furnace has been in operation 24 hours is run out into moulds and forms blistered or pig copper.—Still another process, the 10th, is required to refine and render this tough and suitable for use. A charge of 5 to 7 or even 10 tons of the pigs is introduced into the refining furnace and melted. A scoria forms upon the surface, consisting of the sand which adhered to the pigs and oxides of the metals present. In the course of 22 hours this is raked off, and the melted metal is exposed, presenting a deep red color, and when cool giving a coarse fracture, and possessing little strength, which is owing to the oxygen the copper absorbs at high temperatures. Its surface is now covered with fine charcoal, which protects it from the action of the air, and the process of stirring with poles of green wood, as already described, is performed. The vapor from the wood and the carbonic acid generated throw the metallic bath into ebullition, and the process is continued, while samples are repeatedly ladled out, cooled in water, and examined, until the best quality is obtained, indicating that the process of deoxidation has been carried far enough. The fire is renewed, as also the covering of charcoal, and the metal is ladled out and poured into moulds. It is sometimes necessary in refining impure copper to introduce some lead, which becomes oxidized at the expense of the oxide of copper, and also influences the oxidation of any iron, tin, arsenic, &c., present, which on rabbling the bath collect with the oxide of lead upon the surface. It is essential to convert all the lead into litharge, that none of it is left to injure the copper.—This complicated series of operations admits of considerable variation; and where its general principles are adopted in this country, the use of richer ores, and those free from many of the noxious metals found in those of Cornwall, allows of the practice being greatly simplified by the omission of several of the processes. The calcination is often conducted in large open heaps, which, with the intermixture of very little refuse combustible matter, continue to slowly consume for many weeks, until the sulphur is in great part burned out. For the smelting, cupola or blast furnaces are much used, as practised on the continent of Europe, instead of reverberatories; and the calcined ores in these are mixed directly with the fuel, as in smelting iron ores. The process is thus much more rapidly conducted; but probably it would not be applicable to the poor class of ores smelted in Swansea.—Numerous plans have been devised for substituting shorter processes, some of which are worthy of notice for the philosophical principles upon which they are based, though their general adoption may not be practicable. Bankart's process is to calcine the pyritous ores reduced to powder, and treat the product converted in part into soluble sulphates directly with water in large vats. From the liquor, soon after being drawn off, the copper is precipitated by metallic iron, and is ready at once for refining; the insoluble residue is dried and returned to the furnace with the next charge. About as much iron is consumed as copper obtained; it may be recovered in the state of green vitriol, but this cheap product will pay but a small portion of the first cost of the iron.—Phillips and Darlington describe in their work (p. 178) the Norwegian process of Sinding, in which the copper is precipitated as a sulphuret by means of sulphuretted hydrogen prepared from fuel which gives off hydrocarbon gases and mundic; also the method in use at Linz, on the Rhine, of treating poor sulphurets by roasting and afterward with sulphuric acid, by which they are converted into sulphates; and again, a profitable mode of separating copper ores of very low grades from a quartzose gangue by means of hydrochloric acid, successfully practised at Twista, in the Waldeck; the ores appear to resemble those at the Bellevue mine, N. J.—Rivot and Phillips roast the ores to as complete expulsion of the sulphur as is practicable, and then reduce the resulting oxides by the introduction of bars of iron into the heated mass; arsenic, tin, and other metals are not removed from the copper by this operation.—In Napier's process, which is much approved, calcined Cornish ores are mixed with rich sulphurets in such proportion that the resulting matte shall contain from 30 to 50 per cent. of copper. The mixture is fused in a reverberatory furnace, the surface is skimmed of the slag, and a quantity of crude carbonate of soda, or a mixture of sulphate of soda and charcoal, is added and stirred in. The soda is converted into a soluble sulphuret, which takes up arsenic, tin, or antimony present, and all are dissolved out together, when the matte run out and moulded into blocks is afterward treated with water. The insoluble portion falls to a finely divided powder, which when separated and dried is again calcined. It is then mixed with silicious ores free from sulphur and arsenic and smelted. An excellent quality of metal is thus obtained with great saving of labor. Some other processes also are described, by which the decomposition of the ores is effected by various mixtures both in the dry and the wet way.—The rich blue carbonates and red oxides of copper of Chessy near Lyons in France are smelted directly without other treatment in small blast furnaces called *fourneaux à manche*, the ores being mixed to produce about 27 per cent. of copper, and about 3 per cent. of lime and a small amount of scoria being added. Two hundred pounds of the mixture with 150 lbs. of coke are charged every 2 hours. The metal and slag run out into a receptacle formed by the extension of the hearth in front of the furnace, and here the floating slag is skimmed off. Every 12 hours the receptacle is tapped, and the metal, called black copper, is let into another basin and skimmed. Its surface is cooled by sprinkling water upon it, and the metallic crust in a circular plate an inch thick is removed, and then another disk formed in the same way is taken off, and so on. Three varieties of slag are recognized, the red, black, and blue, the first richest and the last poorest in copper. The production of the last is increased by due attention to preserving the right proportion of lime flux and the proper degree of temperature in the furnace. The charges gather much silica from the in walls of the furnace, which must therefore be frequently renewed. The metallic copper is contaminated with a little silica, some protoxide of iron, and, when black slags are produced, 7 or 8 per cent. of metallic iron. These are removed by a subsequent refining.—The bituminous slates containing pyritous copper of Mansfeld, Germany, and yielding only 2 or 3 per cent. of copper, are roasted in heaps of 100 tons or more for 15 to 20 weeks, the ores requiring little addition of combustible matters. In this operation, as conducted on the lower Hartz, the sulphur is in part saved by collecting it on the top of the long heaps. The calcined ores, being suitably mixed with fluxes of calcareous and argillaceous slates, fluor spar, and rich slags, are charged together with coke in slender cylindrical furnaces 15 to 18 feet high, much like the blast furnaces used for smelting iron ores, a charge consisting of nearly 50 cwt. of the mixed ores and fluxes. A matte of about 5 cwt., containing 30 to 40 per cent. of metal, is obtained in 15 hours, together with a quantity of rich slags. The metal flows alternately into 2 circular basins in front of the furnace, and is taken out in disks, as described in the French process. The matte may contain sulphurets of zinc, iron, nickel, cobalt, and silver. It is afterward treated by a number of successive roastings, varied according to its quality, and extending through many weeks. These are succeeded by a second fusion with rich slags as a flux, and this by 6 more roastings, occupying 7 or 8 weeks. They are conducted like those before, in kilns, layers of brushwood and charcoal alternating with those of the cakes of matte. The product contains some sulphate of copper, which is dissolved out by lixiviating the calcined matters in a series of vats with water, and is afterward recovered by crystallizing. The matte, mixed with products of other operations, and with coke or charcoal, is remelted, yielding black copper containing silver and cupriferous slags. The silver is separated by the process of eliquation, the black copper being melted with 3 or 4 times its weight of lead, and the flat disks of alloy obtained being exposed in a suitably arranged become a teacher in his family and an inmate of the chateau. At a later period it became the property of M. Necker, and this statesman, as well as his wife and daughter, Madame de Staël, the eldest son of the latter, Auguste Louis, and her daughter, the duchess de Broglie, are all buried there. As the place of residence for several years of Madame de Staël, Coppet acquired great celebrity. Auguste de Staël turned the estate into a model farm, and the present owner is Madame de Staël's son-in-law, the duke de Broglie.

COPROLITES (Gr. *κοπρος*, dung, and *λιθος*, a stone), the fossil excrements of various kinds of fishes and saurians, found in several geological formations, as the tertiary, chalk, oolite, lias, and carboniferous, scattered among the other fossils in these rocks, and sometimes met with enclosed among the ribs of the fossilized ichthyosauri. They are found, to some extent, in this country in the green sand and coal formations. But in England in some localities of the lias they are so abundant that they lie like potatoes scattered upon the ground. Such is the case for many miles in extent in the estuary of the Severn. Teeth and bones of extinct fishes and reptiles are abundantly mixed with them, showing that this locality must for a long period have been the bottom of an ancient sea. They vary greatly in size, some being the product of the largest ichthyosauri, and containing within them scales and bones of fishes and other animals which served as food to these monsters; while some belonged to smaller individuals, and are now seen in stony lumps of only an inch or two in length. Their color is whitish, grayish, and from this to black. On their surface are still impressed the marks of the tortuous wrinkles of the intestines. The animal remains preserved in the coprolites indicate the prey of these fishes and saurians. The larger kinds appear to have fed upon the smaller of their own species; and these, from the bones found in the coprolites of the largest ichthyosauri, could not have been less than 7 feet in length. A remarkable instance is given by Dr. Buckland of the minute accuracy with which the principles of comparative anatomy are applied to investigations of this nature. A small scale of a fish seen upon one side of a coprolite was shown to Prof. Agassiz, who at once recognized it as belonging to the extinct species *pholidophorus limbatus;* and from a minute tube upon its inner surface, hardly discernible without a microscope, he observed that it must have been on the left side of the body near the head. This tube passed through the scales from the head to the tail of the fish, conveying a lubricating mucus.—C. W. Johnson, in his work "On the Fertilizers" (ch. v.), gives the following composition of a coprolite from the crag formation of the coast of Suffolk, showing its similarity in composition to the fresh bones of commerce, and hence its excellent qualities as a manure, for which purpose these substances are much used in the part of England where they abound:

Phosphate of lime	56
Phosphate of peroxide of iron	14
Carbonate of lime	21
Alumina	4
Silex	2
Carbonaceous matter	1
Moisture	2
Total	100

COPTIC LANGUAGE (Sahidic, *Mentlyptaion* or *Aspi en Kèmi*, language of Egypt; Ethiopian, *Gbetse;* Arabic *Keft*, in which also the Coptic people are called *Ghipt*). Some writers, following the Moslems, derive the name Coptic from *κοπτω*, to cut, to circumcise; Wilkins and Pococke from Koptos, a Thebaic nome on the Nile; others from the Jacobites, a body of heretics who were called Coptes, under Heraclius (A. D. 610–641); this is the prevailing theory of Roman Catholic authorities. Others hold that Copt was the name of the son of Misraim, the founder of Egypt, and that it has descended from him to all the native race; this is the legend of the convents, and the boast of the Coptic people. But since Renaudot, the most eminent Egyptologists have agreed in deriving it from *Αιγυπτος*, or in the hieroglyphic writing *Kahi-Ptah*, the land of Ptah, whose sacred language was the mother of the Coptic, by which alone we are now enabled to understand the ancient Egyptian monuments. This ancient sacred language coexisted with a vernacular dialect, and out of the two, with a mixture of Greek and Arabic words, arose the Coptic, which may be dated from the time of the Ptolemies in lower Egypt; the version of the Gospels in it having been read by St. Anthony, who did not know Greek, about the year 271. The language was used until the 10th century A. D., when it altogether gave way to the Arabic, except in the monasteries, where it was still preserved. With Christianity the Copts adopted not only the Greek religious nomenclature, for which they rejected all ancient Egyptian words concerning worship, but the Greek alphabet as well, even introducing the forms of such letters as *g*, *d*, *z*, *x*, and *ps*, though these sounds do not occur in genuine Coptic. Thus in the Coptic alphabet there are 32 signs, including these intrusive Greek letters; a numeral sign for 6 inserted after *e;* 6 Egyptian letters derived from hieroglyphs (and representing 2 forms of *sh*, *kh*, *h*, *f*, and the English *j*); and a syllabic sign for *ti*. Strictly speaking, however, there are 21 Coptic sounds, viz.: *a*, *e*, *i*, *o*, *u* (which was written *oy*), all pronounced as in Italian, with *y* sounded as a French *u;* *b*, *k*, *l*, *m*, *n*, *p*, *r*, *s*, *t*, *f* (also written *ph*), *h*, the German *ch*, the English *sh* and *th*, and the English *j*. Plutarch speaks of 25 Egyptian letters, but Seyffarth maintains that they were but the signs of that number of sounds which, he says, were common to all ancient nations. Diacritic signs were used; thus a horizontal line over numerals, over contracted words, and over *m̄* and *n̄*, which are then to be read *em* and *en*, &c. The language has 3 dialects, viz.: the Memphitic, or genuine Coptic, which abounds in aspirates, writes *ai* for *ei*, and loves the final *i;* the Sahidic or Theban, which uses the final *e*, and writes *ei* instead of *ai*—in this the *Pistis Sophia*, a Gnostic work, is written; and the Bashmuric, belonging to the 2 oases, the poorest of the 3 in literature—it uses *a*, *e*, *è*, and *l* respectively, instead of *o*, *a*, *ĕ*, and *r*.—All simple words are monosyllabic, unless lengthened by additional vowels; *e. g.: ape*, head; *ohi*, to stand; *mash*, to strike; *pēt*, to run; *ro*, mouth, &c. Verbs become passive by a change of their vowel into *ē: kō*, to put; *kē*, to be put. There are doubled roots, as *shor-sher*, to destroy (*shor*, to throw away); words inserting a vowel, prefixing *a-*, *en-*, *sh-*, or suffixing *-r*, *-s*, *-f*, *-sh*; compounds of 2 words, as *sek-mōu*, to draw water; *rem-ne-kahi* (man-of-land), inhabitant; *tsa-bo* (*ti*, give, *sbo*, learning), to teach; *ham-she* (man-wood), carpenter, &c.; and compounds with the following prefixes: *at-nay*, invisible; *la-foi*, very hairy; *ment*-(or *met*)-*at-nute* (-ism a-the-), atheism; *ref-sōnt* (-or creat-), creator; *shu-taio*, worthy (of) honor; *shin-nay*, to see: hence nouns by *pi-*, *er-*, as *pi-shin-nay* (-ing see-), vision; *an*-(much, again)-*thba*, myriad, &c. Nouns are formed by prefixing *at-*, *ma-*, *met-*; thus: *at-shère* (no child), childless; *ma-nsō* (place-drink), tavern, inn; *met-athmu* (-ity immortal-), immortality. Many hieroglyphs are thus compounded: MT-S (Copt. *met-sei*), ornament; MT-KT (Copt. *met-kōto*), circuit; MT-STN (Copt. *met-suten*), kingdom. The MT expresses our -ment, -dom, -ity, -ism, &c.—There are but two genders. The feminine is often formed from masculine by a vowel change, or by suffixing *-e* (*-i*, M.), or by an article or adjective; thus: *urō*, queen (from *uro*, king); *hinb-i*, ewe-lamb; *alu-shime*, female child; *alu-hout*, male child.—The articles are indefinite, definite, and demonstrative. The former are of common gender; as, *u rōmi*, a man; *han-mui*, some lions. The definite articles are *pe* (M. *pi*), corresponding to French *le*; *te* (*ti*), to Fr. *la*; and *ne*, *nei* (*ni*), to Fr. *les*; thus: *pi-son*, *le frère*; *ti-sōne*, *la sœur*; *ne-tay*, *les montagnes*. They often lack the final vowel, as, *pnute*, *le dieu*. Before initial *h-*, the corresponding aspirates occur, as in Greek; thus, *th-orasis*, ἡ ὁρασις. In hieroglyphs the prefix P- stands for *le*, and N- for *les*, but the suffix -T for *la*; thus, MU-T (Copt. *ti-mau*), *mère la*. The demonstrative articles, either joined or not, are *pei*, Lat. *hic*; *tei*, Lat. *hæc*; and *nei*, Lat. *hi*, *hæ*, *hæc*. In hieroglyphs and Memphitic, they are PAI, TAI, NAI.—Possessive adjectives are formed of the definite article and of the suffixes *-a* (to have), and *-e* (to be, *être à*, to belong to); thus: *pa*, Fr. *le mien*; *ta*, Fr. *la mienne*; *na*, *les miens* and *miennes*; analogous are *pek*, *tek*, *nek*, Lat. *tuus*, *tua*, *tui*, masculine; *pu*, *tu*, *nu*, the same for feminine; *pef*, *tef*, *nef*, his, her, their, masculine; *pes*, *tes*, *nes*, the same for feminine; *pen*, *ton*, *nen*, Lat. *noster*, &c.; *peten*, &c., Lat. *vester*, &c.: *pey* (*pu*), &c., their; *e. g.: pa-nuti*, my God; *pen-hēt*, our heart; *tek-shom*, thy power. The hieroglyph RN-F is for the Copt. *pef-ran*, his name.—Foreign and many Coptic nouns are without a plural form; thus: *ni-apostolos*, the apostles; *han-mages*, some magi; Copt. *pei-hou*, the day; *nei-hou*, these days. Many Coptic nouns become plural by suffixing -i (-e, Sah.) to consonants, or by lengthening final vowels: as, *ape-ey*, heads; *urō-u*, kings; *sbō-ui*, doctrines. Hieroglyphs trebled the noun, or added 3 lines or final diphthongs; thus: KM-UI, Egyptians; MR-UI, regions. Some are anomalous: thus: *eiot*, father; *eiōte*, fathers; *hurit*, guardian; *hurate*, guardians; *son*, brother, *sney*, brothers. Others are more dissimilar, as *shime*, woman; *hiōme*, women; *bōk*, servant, *ebiaik*, servants; *iom*, sea, *amaiōu*, seas.—The cases of declension are signified both by separate particles and by prefixes. The nominative sign is *ensh* (S. and B.), or *enje*; the genitive, *ente*, *en-*, *em-*; the dative and accusative, *en-*, *em-*, *è-*, *é-*; vocative, *pe*; the ablative, *ebol*, *hiten*, *en-*, *em-*, *e-*, and many prepositions. The hieroglyphic genitive is N, NT, M; dat., N, R, L, HR (Copt. *haro*, to); acc., N; abl., M, out from, EM, by, for, MT (Copt. *mut*, to join).—Adjectives become names of origin or of quality by means of *en-*; thus: *rem-en-Kēmi* (man of Egypt), Egyptian; *rem-en-nuti* (man of God), pious. To form the feminine adjectives, add *-i* (*-e*) to the masculine, or lengthen the final vowel. The plural of adjectives is formed like that of substantives. Substantives become adjectives by the prefix *en-*; thus, *psychē neon* (soul of life), living. Some adjectives receive personal suffixes, as *terk*, whole-thou; *naa-s*, great-she. The comparative degree is denoted by *hua*, corresponding to the Gr. μαλλον; the superlative by *khen*, in, *ute*, between, *ebol-ute*, before, *emate* (*emastrō*), very, much, and by the Gr. -ιστος. In ancient Egyptian, the genitive plural (as king of kings), and *enhme*, *estrate*, and *èhote*, indicated plurality.—The numerals are: 1, *ua*, masc., *uei*, fem. (*uai*, *ui*, M.); 2, *snay*, *sente* (*snuti*); 3, *shoment*, *shomte*; 4, *ftou*, *fto*; 5, *tiu*, *tie*; 6, *sou*, *so*; 7, *sashf*; 8, *shmune*; 9, *psit*; 10, *mēt*; 20, *jouōt*; 30, *maa'k*; 40, *hme*; 50, *taiu*; 60, *se*; 70, *shbe*; 80, *hmene*; 90, *pstaiu*; 100, *she*; 1.000, *sho*, &c. Ordinals: 1st, *ti-aphe* (beginning), *shorp*, &c.; the others are formed by prefixing *meh-* (MH) to the cardinals. Distributives are made by doubling the cardinals; multiples by adding *sop* (times); fractions by prefixing *re* (R) with [illegible], part.—The personal pronouns are: *anok*, I; *entok*, *ento* (masc. and fem.), thou; *entof*, he, *entos*, she; *anon*, we; *entoten*, you; *entou*, they. Possessive demonstrative pronouns consist of the article with *ō* (to be) and personal suffixes; thus: *pōi* (the-is-me), my; *pōk*, *pō* (masc. and fem.), they; *pōf*, *pōs*, his, her; *pōn*, our; *pōtn*, your; *pōu*, their. The demonstratives *pi*, *ti*, *nè*, correspond to the Lat. *ille*, *illa*, *illi*. The relative *et*, who, which, what, is indeclinable. The interrogatives *nim*, *eut*, correspond to Lat. *qualis*; *uer*, to Lat. *quantus*, *quot*; and *u*, to Lat. *quid*.—Verbs indicate persons either by suffixes, as *-i*, I; *-k*, *-e*, (masc. and fem.), thou; *-f*, *-s*, he, she; *-n*, we; *ten*, you; *-sen*, they; or by the prefixes, *ti-*, *k-*, *te-*, *f-*, *s-*, *ten-*, *teten-*, *se-*. Particles of tenses are, for the present, *ai*, Lat.

sum; ek, *ere* (masc. and fem.), Lat. *es; ef*, *es*, Lat. *est; en*, *sumus; ereten*, *estis; ey*, *u*, *ere*, *sunt*. The perfect indefinite is *ai* (have-I), Lat. *fui; ak*, *fuisti*, &c. The imperfect, *ne* (*venit*), like the Fr. *venir de*, is inflected thus: *nai*, *nak*, *nere*, *nef*, *nes*, &c. *Pe* following denotes simultaneity, as *nai-kekahey pe*, I was at the same time naked. The future is indicated by *e-*, *-ē*, *eiè*, *ekè*, &c.; the second future (soon) by *na*, to go, or *ei*, toward, as *ekna*, thou wilt be soon; and the pluperfect by *naina*, Fr. *j'allais*. *Sha* denotes habit; thus: *shai*, *soleo; shak*, *soles*, &c. The subjunctive is distinguished by *en-*, that, as *entirashi*, Lat. *gaudeam;* the optative, by *marei* (*velle*), I wish, by *ma*, grant, or by *pe*, to be, as *marekōnh*, *utinam vivas;* the imperative is the root alone, or with the prefix *a-*, be it, or *ma-*, give, as *ajas*, say; the infinitive is the root and used as a substantive; the present participle has the prefix *e-* or *et*, who, as *pilaos ethemsi*, the people sitting. Particles are joined to tenses; thus: *entcrei-tōm*, when I close; *shantei-enjoos*, as long as you say. Other particles are *ēnei*, if, *shan*, if so that, and *empati*, before that. Negation is indicated by prefixing *en-*, *empe-*, *empate-*, or by affixing *-an*, or by inserting the verb between *en-* and *-an*. Endings of the sacred dialect are -I, I; -K, -T (masc. and fem.), thou; -F, he; -S, she; -N, we; -TN, you; and -SN, they. Its auxiliary verbs are E-, A-, O-, UON-, to be, and ER-, to do, to make.—The prepositions are *è*, in, of, from; *èbol*, *ebolhiten*, out, through; *èhote*, before, above, on; *nem*, with; *enten*, of; *sha*, till, to; *kha*, under, against; *ha*, under, to; *haten*, near by, with; *hi*, in, on, &c.; which are lengthened by such suffixes as *-rat*, *-tot*, *-rō*, *-ma*, *-fēt*, *-ō*, &c. Adverbs are made by prefixing *è-* to nouns; thus: *èphlēu*, in vain, *èpehou* (on the day), daily; or by prepositions, as *khen u rashi* (in a joy), gladly. The most frequent conjunction is *jè* (saying), that, because, whereas. Others are *shantei*, while; *enei*, *eishan*, if; *empati*, before that; and many Greek ones with their own signification, as *de*, *te*, *alla*, *an*, *eti*, *ana*, *kata*, *hina*, &c. The hieroglyphic prepositions are N, Copt. *en;* NT, *ente;* HR, *haro*, to; HT, *hahte*, near; RM, *erem*, with, near, by.—The construction is strictly logical, the subject being followed by the verb and this by the regimen. Specimen: *Pen iōt et khen* (*noster pater qui in*) *ni* (article) *phēuì* (*cœlis*): *Maref-tubo* (*utinam sanctum*) *enje* (artic.) *pek ran* (*tuum nomen*). *Mareì* (*veniat*) *enje pek meturo* (*tuum regnum*), &c.—Translations of portions of the Coptic Scriptures, of Gnostic odes, and inscriptions have been made by Huntington, Mareshall, Pococke, David Wilkins, Tuki, Giorgi, C. G. Woide, F. Münter, Mingarelli, Zoëga, Quatremère, Engelbrecht, H. Tattam, L. Ideler, G. Seyffarth, Schwartze, P. Bōtticher, and others. Peiresc was the first European student of Coptic. Saumaise and Scaliger made little progress in it. Athan Kircher, 1636–'44, devoted some attention to it, but fell into many errors. Waldoni (1653), E. Vinding (1660), Bonjour (1699), Blumberg (1716), Tuki (1778), Scholtz (1778), and Didymus Taurinensis or Valperga (1783) wrote on the grammar and lexicography. The *Opuscula* of Jablonski contain an excellent glossary (Leyd., 1804). Important contributions are furnished by the *Recherches critiques et historiques sur la langue et la littérature de l'Égypte*, by Quatremère, Paris, 1808; the "Grammar of the Egyptian Language," by Tattam, London, 1830, with an appended dictionary by Young; and the grammar and dictionary of Champollion the younger. Rosellini's treatise on the Coptic language, Rome, 1837, was, to a large extent, copied from Champollion. Among the latest and best grammars are those of Peyron (Turin, 1841); of Benfey (Leipsic, 1844; showing its relation to the Semitic languages); of Schwartze, edited after his death by Steinthal (Berlin, 1850); of Uhlmann (Leipsic, 1853); and of Seyffarth (Gotha, 1855). The best vocabularies are those of Vessière de la Croze (edited by Woide, Oxford, 1775), Rossi (Rome, 1808), Tattam (Oxford, 1835), Peyron (1835), Parthey (Berlin, 1844).

COPTS, the name of the principal sect of Christians in Egypt and the valley of the Nile. Ethnologically, the Copts are beyond question the best representatives of the ancient Egyptian race. They are the most lineal descendants of the people which inhabited Egypt in the time of the Ptolemies. The race, indeed, has not been purely preserved, since, with all the precaution and prejudice against marriage with foreigners, the blood of the ancient Egyptian has been mingled with that of the blacker tribes of the upper Nile, and that of Greek and Arab conquerors. The Copts, as a race, are far less homogeneous than the Jews. Yet while it must be allowed that the modern Nubians bear more resemblance to the ancient Egyptians in beauty of form and in some physical characteristics, it is equally certain that in the outlines of feature, and in disposition and temperament, the Copts are more like that people who listened to Origen or followed the processions of Cleopatra. The elements of their character and their mental habits are not those of the Arab people, with whom they offer in Egypt the constant contrast. This contrast may be owing, however, in some degree to the difference in costume and in religious observance. One whose long residence in Egypt entitles his opinion to great weight, Mr. Lane, affirms that the physical difference between the Copts and Moslems of Egypt is very slight, that both races are mixed, and that Moslems themselves find it hard to recognize a Copt when he has adopted their raiment. The principal differences which he notices are that the Copts are a smaller race, and have a downcast and sullen look not usually seen on the face of a believer in Islam. As a general rule, the complexion of the Copts is dark, of a deep brown, almost approaching to black. The nose is straight, widened at the end; the eyes, which incline upward, are black, the forehead is narrow, and the hair curly. Their dress is of dark colors, both in the turban and flowing robe, either of brown, dark blue, or black. In the towns and cities this is an invariable distinctive mark. No respectable Copt will allow himself to be mistaken for a Mohammedan by wearing a white or red turban. But in the villages of upper Egypt the attention to costume is less scrupulous, and the Copt women cannot by dress be distinguished from the Moslem. The cross, tattooed upon the hand of the Copt woman, is a more decisive badge; and for the man an inkhorn at the girdle is another badge, since the work of scribes and clerks in Egypt is almost wholly in the hands of Copts. Their education is usually much superior to that of Moslems, and they are more apt in those pursuits which require quickness of sight and readiness of invention. Unlike the Moslems, too, they drink freely of spirituous liquors; and cunning management of this love of arrack and brandy has been the means of despoiling Copt convents of their most precious manuscript treasures. In the matter of food, their customs are in many respects identical with those of the Jews. They will not eat things strangled, nor blood, nor the flesh of swine; and above all things, they shun camel's flesh as unclean. With the other races of Egypt they now seldom intermarry, such connection being prohibited by the ecclesiastical law.—But that which most distinguishes the Copts from other inhabitants of Egypt is their ecclesiastical system, to which they are devotedly attached. No body of Christians are more forward in their boasting, or more strict in their exclusiveness. They hold that their ritual is the most ancient Christian ritual in existence, and have reason for their claim. They reckon in their list of saints an evangelist, with many of the most celebrated fathers and doctors of the church. They stigmatize as heretical the communions of Greece and Rome; and they regard with intense hatred those of their own countrymen who recognize the authority of the pope or the Byzantine patriarch. They attend with untiring zeal upon the celebration of their sacred rites, are careful that their children shall be early trained to the practice of prayer in the church, and regard the orders of their clergy with great deference. The church, though fallen far from its former importance, and so diminished in numbers that it is computed to have in all Egypt not more than 150,000 members, keeps its organization, and is as elaborate in its distribution of parts as when its adherents were numbered by millions. It has 5 orders of active and secular clergy, beside the order of monks, which holds a very important relation to the rest of the church. Historically, the church of Egypt is a monastic church. The beginnings of the monastic life were in its deserts; and the hermits and cenobites of the Thebaid and the Red sea coast have given the example and the impulse to all subsequent development of Christian asceticism. The present head of the Coptic church is the patriarch of Alexandria. His residence, however, like that of most Egyptian dignitaries who join Alexandria to their titles, is in the more attractive city of Cairo. In this city he has a palace, and derives a large revenue from the numerous houses which have come gradually by gift and purchase into his possession. He holds office for life. He is selected, usually by lot, from a list of 8 or 10 monks designated by the superior of the convent of St. Anthony, near the gulf of Suez. This convent, celebrated as the residence of the model hermit, has the exclusive honor of furnishing the chief ruler of the church, an honor which formerly belonged to the more ancient convents of Nitria. The patriarch, being chosen from the order of monks, is of course unmarried; he must continue, even in his exalted state, to conform to his monastic custom of dress and diet and sleep, must wear wool next to his skin, must fast at the prescribed seasons, and must be waked in the night perpetually to perform the duty of purification. The patriarch's authority in the church is almost despotic. He appoints the patriarch of the Abyssinian church as his suffragan, and compels him to go, as into exile, to that distant and uncomfortable region of the upper Nile. Some writers assert that it is customary to send the Abyssinian patriarch in chains, in token of submission and dependence. But a general rule is not to be inferred from single instances, nor is it probable that this interpretation of such an instance is correct. Next in rank to the patriarch are the bishops, the full number of whom is 12, though the sees are not always all supplied. The bishops, like the patriarch, wear the broad round turban, and are celibates. It is customary to choose them from the convents, though the canons of the church do not always require this. They reside in different parts of the land. There is a bishop at Thebes, at Osioot, at Negaddeh, and in most of the large towns where the Coptic population is considerable. Below the bishops are the arch priests, who are sometimes at the head of the convents, and sometimes are chosen directly from the order of the priesthood. Their functions correspond to those of archdeacons in the English church. Next to these are the priests, who may be married, provided the marriage has taken place before their ordination. After that, they are not allowed to marry; nor can any one be ordained a priest who has had more than one wife, or has married a widow. The priest wears a turban of peculiar shape, narrow in the rim and flattened at the top. He is not compelled to abstain from secular labors, but may earn money by a trade or a profession. The same rules apply to the *shemma*, or deacon, who is only an incipient priest. Both priest and deacon receive ordination from the hands of the bishop, or, if they live in Cairo, from the patriarch. In reality most of them, especially in lower Egypt, are unmarried, their ranks being chiefly recruited from the convents. Those of the monks who are eminent for intelligence or sanctity, or who have commanding physical presence, are sure to be called, sooner or later, to offices of influence in the hierarchy.—The Coptic convents were once very numerous, 336, according to the legend. They covered the desert of Nitria, abounded in the Thebaid, and were found not only on the shores of the Red sea and the confines of Nubia, but in the most inaccessible places along the Nile. The sexes were separate, and nunneries were as common in Egypt as in Italy or Spain. At present their number is greatly reduced. Of monasteries proper, in which only men are admitted, there are but 7, those of St. Anthony and St. Paul in the eastern desert, 4 in the desert of Nitria, and one at Mount Koskam, in upper Egypt. In these the monastic rule is rigidly observed, and the old customs are kept in their integrity. Beside these, there are many other ancient foundations, which retain the reverence of the Coptic people, though the strictness of the monastic rule has been widely departed from. The convent of Sitte Gamian, near Damietta, is honored by an annual pilgrimage. In Cairo there are 3 convents; in Fostat or Old Cairo, 2; in Alexandria, 2; 2 in the Fayoom, where once there were 30 or more; and one in Feesheh Dibbeh, Boosh, Aboo Honnes, Mellawee, Ekhmim, Girgeh, Negaddeh, and other towns along the river. The best known to travellers is the Deyr el Adra, or convent of the Virgin, which crowns the summit of a precipitous rock, the Gebel el Tayr, about 60 miles above Cairo, on the E. bank of the Nile. The mendicant monks here watch every foreigner's boat as it passes, and swim off to it, beseeching with loud cries for charity, on the ground of a common Christian faith. The white and red monasteries near Souhag are also frequently visited on account of the remarkable architecture of their churches. In the neighborhood of Abydos there is also an important convent. But in all these establishments the monks have lapsed into secular habits, the fasts are much neglected, women live with the men, and the convent is only a Christian village of greater or less extent. In the regular monasteries, such as those of Nitria and of St. Anthony and St. Paul, hard and long probation is required before initiation. The novices are the menials of the convent, hewers of wood and drawers of water. All are vowed to poverty, and the gifts of visitors and devotees only go to swell the common store. The dress is a simple shirt of coarse woollen fabric. The badge of the class is a dark blue strip of cloth, which is suspended from the turban below the back of the neck. Only on feast days is animal food allowed, and then in small quantities; the ordinary food of the brethren is black bread and lentils, and on fast days they are deprived even of this meagre fare. The convents, when not situated on some inaccessible rock, are surrounded by a high and strong wall, which has only a single iron door, and in some cases is wholly without opening, the means of entrance being a pulley from the top. The larger part of the monks are ignorant, dull, and fanatical, acquainted only with their ritual and unable to use the manuscript treasures which they have inherited. These precious relics are fast disappearing from the monasteries. The visits of Tattam and Curzon, and others of similar tastes, have relieved the brethren of most of their precious charge, and but few more than the books necessary to conduct the worship remain in the Nitrian convents. Some of the most valuable of these MSS. have been secured to the British museum. They are in Syriac and Arabic, as well as Coptic, and some of them date back as early as the 5th century. The number of monks in the 4 Nitrian convents, according to Sir Gardner Wilkinson, is 77. In the neighborhood of these convents are the ruins of many others.—Baptism, a rite to which the Copts attach great importance, is performed by dipping the child 3 times into water which has received a few drops of consecrated oil. An unbaptized child will be blind in the next world. The rite ought to be administered to a male infant 40, and to a female 80 days after birth. It secures regeneration. Next to baptism is circumcision, which is performed upon boys at the age of 7 years, though without any special religious ceremonies. It is more scrupulously attended to at Negaddeh than at Cairo. The Copts are as careful to observe their seasons of daily prayer as the better class of Moslems. Seven times a day they perform their lustrations, turn to the east, recite their *Pater noster*, and beg in 41 repetitions for the Lord's mercy. Their rosary contains 41 beads. Many of them go over in these 7 daily exercises the whole of the Psalms. The public religious service is excessively long, lasting at least 3 hours before the consecrated cakes, stamped with the sign of the cross and the pious inscription, can be distributed to the people. It is accompanied by monotonous chantings, abundant burning of incense, processions of the host around the church, and the noisy beating of cymbals at intervals.—In the ordinary construction of Coptic churches there are 4 compartments. At the furthest end from the doorway is the chancel, the *heykel*, which is completely hidden behind a high screen, with the doorway in the centre closed by a curtain, on which a cross is embroidered. Next to this is the part appropriated to the priests who interpret in Arabic the Coptic service to the singers, to the leading men of the congregation, and to strangers who may be present. This is separated from the next compartment by a high lattice, in which there are 3 doors. In this 3d compartment, which communicates directly with the street, are stationed the mass of the congregation. A 4th compartment in the extreme rear, or on one side, is reserved for the women. This is dimly lighted, and separated from the main room by a lattice-work partition. The women wear their veils during worship. The poor of the congregation wait during the service around the outer doorway, and receive alms as the congregation passes out. As in the mosques, every worshipper must take off his shoes before his feet touch the mats of the holy house, and must go at once to kneel before the cross on the curtain. The more devout then go round and pray in turn before the pictures of the saints, which are hung around the second apartment, leaving a kiss upon those that are within reach of their lips. During most of the service the congregation remain standing, or rather leaning upon long crutches, with which most of them are provided. The service within the heykel or sanctuary is entirely from the Coptic liturgies. No other tongue is allowed before the altar. The priests who officiate here wear ornamented vestments specially appropriated to the various religious seasons and festivals. The ordinary celebration of the eucharist requires 2 or 3 priests within the heykel, while as many more explain the lessons to the people in the next apartment. The communion is given to the clergy in both kinds, but the laity are privileged only to have cakes on which the wine has been sprinkled. These cakes are about 3 inches in diameter and half an inch in thickness. They are brought in baskets to the door of the heykel, and the members of the congregation rush forward eagerly to secure them. As in the Jewish synagogues, there is much change of postures, much going out and coming in during the service; and the general appearance of the worshippers is more formal than reverential. The confessional is as important in the Coptic as in the Roman church; the more devout kneel and confess their sins to the priests at least once in every week; and none have a right to ask for the sacred bread until they have eased their minds by such acknowledgment. The penances imposed are similar to those in the Roman church.—The regular seasons of fasting in the Coptic church include more than half the year. With the exception of the 50 days between Easter and Pentecost, every Wednesday and Friday throughout the year are "meagre days," in which meat is prohibited. Beside these, there are the fast of the Nativity, 28 days long; the fast of the Apostles, which follows the Ascension festival; the fast of the Virgin, 15 days in length, to prepare for the feast of her Assumption; and the great fast of Lent, which, with the additions that various patriarchs have made, and the preliminary fast of the prophet Jonah, extends to 58 days. In these fast seasons there is a daily service in the church, and the houses of worship are kept constantly open. There are 7 principal festivals: those which commemorate the nativity, the baptism, the triumphal entry, the resurrection, and the ascension of Christ, the Pentecost miracle, and the annunciation to the Virgin. All of these festivals occur within the first half of the year, 2 of them in January, and the remaining 5 usually in April, May, and June. At the feast *El Meelad*, the Christmas, *El Gheetas*, the baptism, and *El Kabeer*, the Easter, there is a midnight service in the churches. The feast of baptism is still further honored by the custom of plunging into the river, or into a tank in the church, after prayers have been said and the water duly blessed. The men and boys together go through this ceremony, which is accompanied by a washing of the feet, performed by the priest. Beside these principal festivals, there are the feast of the Apostles, the holy Thursday and Saturday of Passion week, and the *Saleeb* feast in September, which commemorates the finding of the true cross. These feasts are marked by unusual show in dress, by largesses to the poor, and by indulgence in ardent spirits to the degree often of intoxication.—The Copts have a convent in Jerusalem and a chapel in the church of the holy sepulchre, and there are perhaps 100 of their communion who reside in the holy city and welcome the pilgrims in their annual visit. The duty of pilgrimage is as binding upon Copts as upon Moslems; but the number of those who fulfil it is comparatively small. The black turbans of the Copts, however, are always conspicuous in the crowd which goes down to the Jordan on the week succeeding Easter. The time of pilgrimage and the arrangement of the ecclesiastical year are substantially the same as those of the Greek and Armenian churches.—Like all orientals, the Copts decorate their houses of prayer with ornaments of ostrich eggs, rude inscriptions, and tawdry pictures of their favorite saints. Chief of these is the fighting St. George, whose name is perpetuated in the town of Girgeh, and whose face is on the wall of almost every chapel. Next in honor are the hermits Anthony and Paul and Macarius, the last of whom is the especial protector of the Nitrian convents. St. Athanasius is not neglected, though many of the Coptic brethren are ignorant of his name. The MSS. are sometimes adorned with representations of the Virgin and the apostles. In one of these St. John is presented with face gashed and with woolly hair. The Abyssinians, however, excel the Copts in this kind of art. The form of the churches and the general style of Coptic architecture is that of the Greek basilica; none of their churches are cruciform. In many instances, as in the temples of Medeenet Âboo, and the Deyr el Medeeneh and the Deyr el Bahree at Thebes, the ancient heathen temples were converted into Christian churches, and their walls daubed over with pictures of the saints. Some of the churches are still subterranean; and recent discoveries at Thebes have revealed there a church of the catacombs hardly less interesting than the churches beneath St. Agnese and St. Sebastian.—The creed of the Coptic church is that of the Monophysites, who were condemned as heretics at the council of Chalcedon in 451. They deny the doctrine of two natures in Christ, and insist that after the incarnation there was but a single nature and a single will. In common with the Greeks, they hold that the Holy Spirit proceeds from the Father alone. It is affirmed by some writers that they believe the doctrine of transubstantiation; but this is denied by the Coptic priests, who consent to a theory more like the Lutheran than the Catholic. The number of sacraments is 7, but these differ in several particulars from the Roman sacraments, faith and prayer being substituted for matrimony and extreme unction. They acknowledge only 3 authoritative councils of the church, the 3 which preceded the council at Chalcedon, viz.: of Nice, of Constantinople, and of Ephesus. The general name by which the Egyptian church is known in controversy is that of Jacobite, which name was applied to them as the followers of the Eutychian Jacobus Baradeus, one of the chief apostles of the heresy. This heresy they share with the Abyssinians, with whom indeed in most particulars they sympathize. The doctrine and practices of the Coptic and Abyssinian churches are substantially the same; there is a convent of Abyssinian monks in the Nitrian desert; they share the same chapel at Jerusalem; and the patriarch of the church of the mountains is dependent on the head of the church of Egypt.—Portions of 3 separate versions of the Scriptures into the Coptic tongue have been found among the MSS. brought from the Egyptian monasteries. How early any of these versions were made, or which of them was the earlier, it is impossible to decide. It is certain that the Scriptures were translated into the native language of Egypt before the middle of the 4th century, since at this date a collection of rules for the monks had been drawn up in that language by Pachomius, on account of their inability to read the language of Greece. St. Anthony probably read in Coptic the words of the Gospels. Of these 3 versions, that used in lower Egypt and the Nitrian desert has received the name of Memphitic; that used in upper Egypt the name of Thebaic; and to the third, which, it is conjectured, may have been used in the eastern part of the Nile delta, the name of Bashmuric. The Thebaic version, which is often called the Sahidic, is the most important in the textual criticism of the New Testament; while the Memphitic, which is usually styled the Coptic, has the most authority in the existing Egyptian church. An account of the variations of the Coptic versions from the received Greek text belongs properly to the history of the Bible. The first printed edition of the Memphitic New Testament was issued by David Wilkins, in quarto, at Oxford in 1716, with a Latin translation. A later and more accurate edition was begun by the Prussian Schwartze, in 1846, but only the 4 Gospels were published before his death. Since 1852, Dr. Paul Bötticher of Halle has published the Acts of the Apostles and the Epistles. Another edition, under the superintendence of Dr. R. T. Lieder of Cairo, has been published by the London society for promoting Christian knowledge. The Thebaic version has been collated and fragments thereof published since 1779 by Woide, Mingarelli, Giorgi, Münter, and Ford. Fragments of the Bashmuric version have been published by Zoëga and Engelbrecht.—The Copts have 3 liturgies. The principal is a translation from the Greek liturgy of St. Basil, in which, however, several alterations are made to adapt it to the variations in doctrine and discipline. Another, which bears the name of St. Gregory, was probably borrowed from the Armenian church (of which Gregory was the apostle and founder), after that church lapsed into the Eutychian heresy. A third is doubtfully attributed to the Alexandrian Cyril, who in all the churches of Egypt has great authority, and is honored by the pompous title of "doctor of the world." Of these liturgies there are Arabic translations in use in all the churches. Most of the priests are unable to understand their sacred dialect except in a translation. (See Coptic Language.)—The character of the Copts as a race is differently judged by different observers. Some recent travellers (for instance, the Rev. J. P. Thompson) speak favorably of them in contrast with the Turks and Arabs, both as to their intelligence and their honesty. Their position as tradesmen, scribes, overseers, and sometimes officials, seems to justify this estimate. The title M'al'lim, universally given to the better class of Copts, is a title of respect. In the precious metals they are skilful workers, and the best specimens of modern Egyptian art in house and bath building are from their suggestions. But other witnesses, among whom is Mr. Edward W. Lane, affirm that the Copts as a class are false, hypocritical, rapacious, and profligate, bitterly hostile to all other Christian bodies, and ready for gain to become apostates to Islam. On the authority of one of their own number, he states that the patriarch is an unscrupulous tyrant, and the priests are unblushing beggars. A middle estimate between these opposite judgments will probably be near the truth; and it may be believed that the average morality of the Copts in Egypt is about the same as that of the other races, with the single exception of the vice of drunkenness. The Copts whom travellers usually meet are of the more respectable class, and hide their avarice under the mask of courtesy. They are more familiar and fluent than the Turkish effendis, and show in their intercourse none of that contempt for the infidel which the most polite Moslem can hardly refrain from manifesting.—The domestic customs of the Coptic people differ but slightly from those of the Arabs of the Nile valley. Marriages are contracted through the intervention of agents; there is the same wailing of women when a body is buried, and mourners are hired to fill the vacant house with their lamentations after the funeral is over; there are the same visits to the tombs on the eve of festivals, and similar rites of expiation followed by almsgiving. There are some peculiarities in their marriage ceremonies. The Copt bride, unlike the Moslem, has no canopy to cover her in the procession to the bridegroom's house; at the preliminary feast pigeons are released from the pies in which they have been imprisoned, and fly around the room shaking the little bells attached to their feet; in the church, beside the sacrament of the supper, there is a ceremony of coronation, and the priest sets on the foreheads of the new couple a thin gilt diadem; the bride, in entering her husband's house, must step over the blood of a newly killed lamb; and the whole pageant, which has lasted 8 days, ends with a grand feast at the bridegroom's house. This is the custom with the wealthy and on the occasion of a young girl's marriage. The poor are wedded more simply, and no parade is made when a widow goes to the house of her second husband. All marriages, to be religiously lawful, must be licensed by the patriarch or bishop; but as civil contracts, marriages licensed by the cadi are valid, and many of the poorer Copts prefer the disgrace of that resort to the extortion of their own spiritual rulers. Such marriages, moreover, are more easily dissolved than those which the priest solemnizes. The respectable Copt women live in the harem, in seclusion. The wife's adultery is the only ground for divorce, notwithstanding that the incontinence of the husband is regarded as a sin.—In most of the cities and large towns the Copts form but a fraction of the population. In the city of Cairo they have been estimated as high as 60,000; other writers put their number at 30,000, 20,000, or even 10,000. At Negaddeh, in upper Egypt, there are 2,500; and Minieh, Osioot, Ekhmim, and Girgeh, have each a considerable Coptic population. In the neighborhood of the sugar factories of Reramoon and Roda, there are several Copt villages, in which the agricultural superiority of the Christian over the Arab *fellah* may be tested. The clerks in these sugar factories are Copts. In Cairo, one of the most eligible portions of the city, near the Esbekieh or park, is inhabited exclusively by Copts. The whole race, from the sea to the Nubian frontier, number somewhat more than a 15th of the entire population of Egypt. In Nubia they are not found, and would not be allowed to live there by the bigoted Moslem race.—The history of the Copts in Egypt, from the time of St. Mark to the Arabic conquest, is the history of the land itself. The names of their patriarchs, scholars, and anchorites, Clement, Origen, Athanasius, Cyril, Dionysius, Anthony, Macarius, and many more, belong to the annals of the Christian church and are commemorated both in the Romish and Greek calendars. From the 3d to the 6th century, Egypt had great influence in settling the docrines of faith; its patriarch was the rival of the Roman bishop; its hermitages were the most attractive shrines of pilgrimage, and in its solitudes the persecuted believers found safety. From the latter half of the 5th century, the controversy between the Melchite or royalist party, who adhered to the creed of the Greeks, and the Jacobite party, who were Eutychians, was vehemently maintained for more than a century, the victory inclining more and more to the Jacobite party. The pacific policy of Zeno for a time restrained open warfare; but in the succeeding reigns of Justin, Justinian, Phocas, and Heraclius, the strife of arms was added to the strife of words, and bloody persecutions were carried on. In vain Apollinarius, at once prefect and patriarch, attempted by threatening and massacre to convert the Jacobite masses; roused by their zealous bishops, they returned defiance, and early in the 7th century all Christian faith not Monophysite was heresy, from Alexandria to Syene. To quarrels with the Greeks succeeded quarrels with each other about minor points. Theodore and Themistius discussed the question concerning the wisdom of Jesus, the latter expressing the belief that Jesus was not omniscient. John the Grammarian affirmed that there were 3 Gods, and rejected the word away from the doctrine of the being of God. In the 5 years of his administration as patriarch, from A. D. 611, John the Almsgiver made more converts by his zeal in good works than by his zeal against the Greek heresy; yet he was not acknowledged as a genuine patriarch, since he was appointed to office by the emperor, and followed the imperial party when it was driven from Alexandria by the invading Persians. In the 10 years of Persian rule the patriarch was a true Copt. When the Romans regained power, the Jacobite Benjamin was displaced, and for a short time the church of Egypt had a ruler whose opinion was a compromise between the Greek and the Jacobite views; maintaining two natures in Christ, but only a single will. In the great strife between the Greeks and the Arabs, which occupied the succeeding years, the Coptic church secretly inclined to the Moslem party, and it has been charged against them that their connivance with Amru and his army decided the contest in favor of the religion of the prophet. But if they were promised amnesty and protection, the promise was not long kept. Within a century from the fall of Alexandria the hands of monks were branded and heavy annual imposts exacted of them, and such as refused to pay were scourged, outraged, and even beheaded; many of the churches, too, were destroyed and plundered. In the reign of the caliph Hashem (724–743), the Melchite dispute was revived by the restoration of some of the Greek bishops to their ancient sees in Nubia, and bribes by one and the other party swayed the authorities in either direction. In 755 it was forbidden to any Copt to hold any public office, even if he should embrace Islamism. In the reigns of the succeeding Abbasside dynasty the humiliations of the Copts were multiplied; the caliph Motawackel compelled them to wear disgraceful articles of dress, and to fasten on their doors pictures of devils; and a century later the mad Fatimite caliph Hakem prescribed for them the black robe and turban, ordered them to wear suspended from their necks a heavy wooden cross, confiscated their churches, and finally decreed their banishment. To save themselves from these heavy penalties, great numbers apostatized. But no new proselyte was permitted to return to his family, unless that should likewise accept the Mussulman faith; and as many of the conversions were known to be feigned, greater strictness was required in the observance of Mussulman forms. In the following centuries the number of Christians steadily decreased. Many churches were turned to mosques, and the reproach which had been formerly brought of arrogance and ostentation was quite removed by the vigilance of their oppressors. In 1301, the rage of the Mogreb ambassador at seeing a Copt riding through Cairo with all the state and retinue of an orthodox effendi, produced an edict requiring all Christians to wear blue turbans, and forbidding them to ride on horses or mules. Fresh conversions to Islam were the result of this edict. In 1321, by a bold conspiracy, the Moslem zealots destroyed simultaneously all the Egyptian churches, many of which were overturned from the foundations. The Christians retaliated by burning in Fostat and Cairo a large number of houses, palaces, and mosques. The punishment for these outrages, though it fell upon some of the Arabs, bore more severely upon the Christians. Some were hanged, some were burned alive, and leave was given to all Moslem subjects to rob and murder any Christian who might be seen wearing the white turban. No government official was permitted to employ a Copt. At the baths they were distinguished by a bell hung from the neck. Very numerous changes of faith resulted from this persecution, and at the end of the 14th century the condition of the Copts in numbers and influence had reached its lowest point, at which it continued with but little variation until the present century. Under Mehemet Ali and his successors, the Copts have had no occasion to complain of unreasonable taxation or of violated rights. Their exemption from military service, which seems to be a disgrace, is in reality a privilege, and is so regarded by most of their body.—A full statement of their history may be found in the 2d volume of Quatremère's *Mémoires géographiques et historiques*. The most condensed account of their manners and customs is given in Lane's "Manners and Customs of the Modern Egyptians." Sir Gardner Wilkinson has given some valuable notices of the Copts in his works on Egypt, and Mr. Curzon has described the appearance and condition of their convents and MSS. A good account of the Coptic versions may be found in the "Introductions to the New Testament," by Hug and Tregelles. Burckhardt, Bunsen, and Lepsius have furnished many important incidental notices, and the Arabic historian Makrizi has treated of the fortunes of the subject people in his elaborate account of their conquerors, and of the Moslem rule in Egypt.

COPYING MACHINE. Various methods have been contrived for multiplying copies of manuscripts. Dr. Franklin recommended writing with gummed ink, and applying to this emery powder, then by the press obtaining an impression upon a pewter plate, which could be used for printing from. Mr. James Watt patented in 1780 a method of transferring writing to a dampened sheet of unsized paper, by placing this upon the manuscript, and passing the two together through a press. The impression being reversed, this transparent paper is used, through which the writing may be read from the back side. Any sort of ink may be employed, thickened with a little sugar. Mr. Brunel introduced a method of dampening the manuscript by rolling upon it a metallic cylinder, covered with several thicknesses of linen, which are moistened with water. This sheet is placed between the thin blank leaves of a copying book, and the whole is pressed together in a hand press made for this purpose. Such is the method commonly used for taking and preserving copies of letters or other manuscripts. A method was contrived in 1806 by Mr. Ralph Wedgwood of obtaining two copies at one writing by the use of a sheet blackened on both sides with printer's ink, and dried between blotting paper for 6 weeks. This is placed between a sheet of letter paper below, and one of thin oiled paper above, and the writing is done upon the latter with an agate style. By the pressure of this marks are produced upon both papers, and those upon the upper sheet, being reversed, are to be read through from the opposite side. Patterns and the outlines of drawings are conveniently copied by this method, by placing the original upon the upper sheet, and going over its lines with the agate style. Machines called polygraphs have also been devised, the object of which is to work two or more pens, connected together by light wires and joints, so that the motions given to one are communicated alike to the other, and as many copies are obtained as there are pens. The latest of these is that of Mr. Nathan Ames, of Saugus, Mass.

COPYRIGHT, a right conferred by law upon an author or his representatives to the sale or use of his intellectual productions. Owing probably to the circumstance that the ideas of property originated in an age of violence, the first laws recognizing property referred wholly to material things; and long before intellectual property acquired a pecuniary value, the laws of property in modern society were established, and it became difficult to admit a new object of property among those recognized by the ancient law. Hence we find that in 1769 the question came up in the case of Millar *vs.* Taylor, whether the owner of the copyright of Thomson's "Seasons" had a perpetual right of property in that work, or the limited term allowed by the copyright act of 1710; and although Lord Mansfield, with two of his associates, declared in favor of the permanency of literary property, Justice Yates took the opposite side, and his opinion was confirmed on appeal in parliament. When the question was afterward brought up in parliament, the bill making a copyright perpetual was rejected in the house of lords. The law of England since that time is regarded as settled against the perpetual right of the author, and the copyrights of authors in that country as well as in the United States are deemed property only by virtue of statute law. In England that right, by the act of 1842, extends to 42 years, and, if the author be still alive, during his life. In order to secure a copyright there, an entry is made in the registry book at stationers' hall of the title of the work, the time of its publication, and the name and residence and interest of the proprietor or proprietors. Copies of books are to be delivered within a month after publication to the British museum, and 4 copies at stationers' hall for Oxford and Cambridge universities, the Edinburgh faculty of advocates, and Trinity college, Dublin. The act 5 and 6 William IV. gives to lecturers a copyright in their lectures, provided they give notice of their intention two days before delivery to two justices residing within 5 miles. In the United States the right of passing laws relating to copyright belongs to congress. The law of 1831 gives to an author the exclusive right of publishing for 28 years, and a right of renewal to himself, his wife or children resident in the United States, for 14 years more, making 42 years in all. No foreigner can obtain a copyright unless residing in the United States. In France and Belgium an author is entitled to a copyright during his life, and his heirs for 20 years after his death. Bavaria, Würtemberg, and the German confederation allow the heirs 30 years after the death of the author. Austria, by treaty with Sardinia, Tuscany, and the Papal States, gives a similar copyright privilege in the Italian states of the empire. It also allows 40 years for posthumous publications. In Russia copyrights are secured to authors for life, and to their heirs 25 years after their death. The British copyright acts relate not only to books, but to maps, prints, engravings, and sculptured images. In the United States they comprehend books, maps, charts, prints, musical compositions, cuts, and engravings. A printed copy of the title of the work must be deposited in the office of the clerk of the district where the author or proprietors reside; for which a fee of 50 cents is paid, and 50 cents for a certified copy of the filing. Within 3 months after publication a copy must be delivered to the district clerk, and copies must also be sent to the Smithsonian library and the library of congress. The penalty of infringement is 50 cents for every sheet printed, published, imported, or exposed to sale, and also a forfeiture of the books; and in case of cuts, prints, or engravings, a forfeiture of the plates, and $1 for every sheet found in the possession of the party prosecuted, and full costs. A penalty of $100 is incurred by publishing in a book or other work that a copyright has been secured when the same has not been secured. Injunctions may also be obtained to prevent the publication of manuscripts where the author's right may be violated by the publication. The law of 1856 secures to the authors of dramatic compositions who have secured copyrights, the exclusive privilege of performing or representing the same on the stage. The penalty for a violation of this right is to be not less than $100 for the first, and $50 for every subsequent performance, to be recovered with costs in the United States courts.—With the view of affording protection to British authors, parliament in 1838 passed a law to secure to authors in certain cases the benefit of international copyright. France, Prussia, Saxony, Hanover, Brunswick, and some other powers, have acceded to this proposition, and authors enjoy the same privilege of copyright in each of those states when it is secured in either of them, as would by law be enjoyed by the author if first published in such state. Regulations are provided to carry out this principle, and moderate duties are prescribed on the importation of the copyright works. This proposition has not been assented to by the United States; and although a treaty was agreed upon in 1854, when Mr. Edward Everett was secretary of state, it failed to receive the sanction of the senate. At that time the law of England allowed a foreigner, by simultaneous publication in that country and in the country where he resided, to obtain the benefits of a copyright in both. The question, however, whether such a want of reciprocity should continue, came up in the house of lords in 1854, in the case of Jeffreys vs. Boosey, and it was held, after full argument, that this privilege should be confined to foreigners who were resident in that kingdom.—It is to be remarked, that by the existing laws of the United States, no provision is made for many artistic productions that are protected by the British acts; and even by those acts no provision is made in the following cases: 1, they give artists no copyright in their pictures, as such, but only for the purposes of engraving; 2, they afford no protection to the purchasers of original pictures against the piracy thereof; 3, they afford the public no protection against the purchase of spurious pictures, and thus operate as an encouragement to the grossest acts of fraud; 4, architects are quite unprotected in respect of their published designs, unless engraved before publication; 5, the new art of photography is also entirely unprotected as respects copyright.

COQUELIN, Charles, a French political economist, born at Dunkirk, Nov. 25, 1803, died in 1852. From 1827 to 1829 he conducted a legal journal in Paris, and during the ensuing 2 years he practised at the bar of his native town. Subsequently he contributed to the Paris journal *Le temps* articles on European and American banking systems. In 1837 he became connected with Lamennais' paper, *L'avenir*. In 1839 he wrote essays on Quesnay and Turgot, and other papers, for *Le droit*, and in the same year he wrote for the *Revue des deux mondes* upon free trade. In 1840 he published a *Traité de la filature mécanique*, of which a new edition appeared in 1845. In 1846 he became a contributor to the *Journal des économistes*, and shortly afterward secretary and eventually president of the free trade association, which, however, was dissolved by the revolution of Feb. 1848. With a view of neutralizing the communistic ideas which then agitated the public mind, he established a paper called *Jacques Bonhomme*, the object of which was to defend the laws of property, but it was not supported. Coquelin then wrote a book, which was very favorably received, on credit and banks, in which he takes up the gauntlet for the free banking system of the United States. In 1851 he became the chief editor of the *Dictionnaire de l'économie politique*, and had already contributed a variety of valuable articles when he died.

COQUEREL, Athanase Laurent Charles, a French divine, born in Paris, Aug. 27, 1795. In 1816 he was graduated at the divinity school of Montauban. During 12 years he preached in the French church of Amsterdam, and occasionally at Leyden and Utrecht. In 1830 he became pastor of the Protestant church in Paris. In 1848 and 1849 he was elected member of the constituent and legislative assemblies. He voted with the moderate republicans, and in the legislative assembly he made several speeches, in which he expressed his favorite idea of founding republicanism upon the basis of evangelical religion. On one occasion he was interrupted in his theological dissertation by M. Dupin, the president, who said to him: *Allons donc, Jésus n'a jamais dit, que je sache: "Ma république n'est pas de ce monde."* His most important act during his political career was to propose, in conjunction with M. I. Buvignier, the total abolition of capital punishment. Since the *coup d'état* of Dec. 2, 1851, M. Coquerel has withdrawn from political life, and exclusively devotes himself to his clerical duties. Eight volumes of sermons, delivered by him from 1819 to 1852, have already been published, and partly translated, like most of his other works, into English, German, and Dutch. In 1841 he published a work in reply to Strauss's "Life of Jesus." In the ensuing year he brought out his *Orthodoxie moderne*, and in 1847 his *Christianisme expérimental*. Among his previous publications, his "Sacred Biography" and "Analytical History of the Bible" are prominent.

COQUILLA NUTS, the fruit of the Brazilian tree *attalea funifera* of Martius, *cocos lapidea* of Görtner. The nuts are nearly solid shells, commonly containing two small kernels of disagreeable flavor. They are valued only for the solid portion of the shell, which is of very close texture, brittle and hard, and of a hazel-brown color. It is susceptible of a high polish, works well in the lathe, and is an excellent material for small ornamental works, as toys, heads of umbrellas, parasols, &c.

COQUIMBO, or La Serena, a city of Chili, capital of the province of the same name; pop. of the latter in 1858, 119,991, and of the former about 8,000. It is situated near the embouchure of the river Coquimbo into the bay of the same name, and has one of the best harbors in Chili, 6 or 7 miles distant. Considerable trade is carried on at this port, the exports consisting chiefly of metals, especially copper. The name La Serena was given to it on account of its serene climate. The province of Coquimbo extends from Atacama on the north to the river Chuapa on its southern border. It is not fertile, but its mines are very productive. Those of copper are the richest in Chili. In 1857, 292 vessels entered the port of Coquimbo, tonnage 86,782, and 309 vessels cleared, tonnage 94,665.

CORA, or Cori, a very ancient Italian town, about 39 m. in a south-westerly direction from Rome, probably of Pelasgic origin, and interesting for its antiquities, among which the remains of; the ancient Cyclopean walls, and a bridge which spans a deep gorge with a single arch, are the most remarkable.

CORAL (Gr. κοραλλιον; Lat. *coralium, curalium*, or *corallum*). The derivation and use of this term are discussed by Theophrastus in his work on plants. Such were these stony products of the ocean naturally believed to be, from their growth resembling that of the productions of the garden. Imitating the forms of trees and flowering shrubs, they rivalled them in gracefulness and delicacy; and the brilliant hues of the blossoms that crowned them made permanently beautiful these gardens in the depths of the sea. The mode of accumulation of the coral masses more resembled that of peat than of animal matters. Upon the old dead bodies the new continued to grow, perpetually adding to the mass, and building up strata to rank as important members in geological formations. It seemed also analogous to the increase of the calcareous bunches of petrified moss upon which the living plant continues to flourish, as the roots below are constantly incased in the carbonate of lime brought among them dissolved in the infiltrating waters. And when at last Peysonnel, in an elaborate memoir sent to the royal society in 1751, supported the opinion (first advanced by the Neapolitan naturalist, Ferrante Imperato, in 1599) that the coral blossoms, *les fleurs du corail*, so described in 1706 by Marsigli, belonged to the animal and not to the vegetable kingdom, his views met with a cool reception among naturalists, and were pronounced even by Réaumur too absurd to be discussed. The power of vegetation to produce stately forests and the minutest plants was familiar to naturalists. To ascribe still greater power and as elaborate skill to "poor, helpless, jelly-like animals," seemed like an insulting demand upon their credulity. The controversy was continued through the greater part of the last century. The coral animals were shown in form resembling blossoms, sending forth their petal-like tentacles from around the circular mouth, and drawing into this their prey. Still Linnæus would admit for them only a nature intermediate between plants and animals, and the word zoophyte, from the Greek ζωον, animal, and φυω, to grow like a plant, was applied by him to the organic bodies, with reference to their supposed relation to both kingdoms. The word is still in use with naturalists, and is regarded as a convenient term for the whole compound mass. So it is used by Prof. J. D. Dana, the highest authority, and the single animal is called by him a polyp.—Coral is the stony frame which belongs to these animals, as a skeleton belongs to an individual of the higher orders of the animal kingdom. It is formed within the mass of them by animal secretion, each individual adding to the common structure, not by actual effort directed to this purpose, but by the involuntary secretion of calcareous matter upon that portion to which he is attached. A single polyp of the genus *astræa*, for instance, cast off as a fragment from any collection of them, soon assumes the discoid form; its tentacles appear around the mouth, which is also the stomach, though furnished with only the one passage for the entrance and exit of the fluids. By the motion of the arms currents are produced which flow into and out of the sack. The calcareous portion of the sea water is extracted, and remains behind in thin plates radiating from the centre of the sack between fleshy plates, which divide the cavity into compartments. It may be that even before this operation has commenced, a new polyp begins to appear in the form of a bud from some part of the imperfect individual, and soon attaining the requisite organs, grows together with the parent polyp, each adding to the calcareous accumulation within, and each sending forth new buds to be developed into new polyps. According to the portion in which the buds appear the mass receives its shape, branching out in some species into tree-like forms, from the buds putting forth laterally, and each polyp forming a separate branch, at the termination of which it is seated. At these extremities the growth goes on, while the stem below is left behind dead. Other species, in which the polyps are arranged side by side, forming a convex surface above, put forth the young polyps in the spaces which are produced between the older ones as these extend upward, thus keeping the hemispherical form symmetrical, till in a single astræa dome a diameter of even 12 feet has been attained, and the polyps, each occupying a square half inch only, have increased to more than 100,000 in number. Many of the polyps are of still smaller dimensions. A porites of the same extent should contain, according to Prof. Dana, more than 5,500,000 individuals. The genus is often met with among the coralline forms, in rudely shaped hillocks sometimes measuring 20 feet across. It is by the spreading of the buds, each of which, as it opens into the living individual, appears like a blooming flower, the mouth being the calyx, and the tentacles spreading like petals, that the gayest forms of vegetation appear to be reproduced in the depths of the ocean.—In addition to the familiar forms of vegetation seen in the star coral (*astræa*) and the brain coral (*meandrina*), the madrepore shrubs and trees, Prof. Dana remarks that "some species grow up in the form of large leaves rolled around one another like an open cabbage, and cabbage coral would be no inapt designation for such species. Another foliated kind consists of leaves more crisped and of more delicate structure, irregularly clustered; lettuce coral would be a significant name. Each leaf has a surface covered with polyp flowers, and was formed by the growth and secretion of these polyps. Clustered leaves of the acanthus and oak are at once called to mind by other species: a sprouting asparagus bed by others. The mushroom is here imitated in very many of its fantastic shapes, and other fungi, with mosses and lichens, add to the variety. Vases of madrepores are common about the reefs of the Pacific. They stand on a cylindrical base, which is enveloped in flowers when alive, and consist of a network of branches and branchlets, spreading gracefully from the centre, covered above with crowded sprigs of tinted polyps. . . . . The actiniæ may well be called the asters, carnations, and anemones of the submarine garden; the tubipores and alcyonia form literally its pink beds; the gorgoniæ and melitæas are its flowering twigs; the madrepores its plants and shrubbery; and astræas often form domes amid the grove a dozen feet or more in diameter, embellished with green or purple blossoms which stud the surface like gems, while other hemispheres of meandrina appear as if enveloped in a network of flowering vines." Over the surface of all these corals each depression was the site of a polyp; and the radiated form of this cell still marks with its plates the similar structure of the animal. As young polyps were produced, they communicated for a time or permanently with the parent stock, through the internal cavity, in some species having in the early period of its growth nothing to mark its separate existence but a new mouth, opened by the side of that of the parent. The tentacles, as they appear, are strengthened and made rigid by the absorption of a drop of water, and are then spread forth in search of food. When disturbed, the water is ejected, the arms contract and sink within the mouth, the lips of which roll inward, concealing within their folds the whole organization. Upon many even of the larger corals the living portion is but the thinnest covering of the deserted mass beneath. Upon the delicate branchlets of the gorgonia the polyps, scarcely visible to the eye, secrete the calcareous matter of these forms, and fix them so strongly to the rock that this will sometimes be broken sooner than the zoophyte will separate from it. Numerous forms of coral are thus produced by as many species of polyps. These are classified and ably described by Prof. Dana in his great work "On Zoophytes."—Among all the tribes of the zoophytes, some species or other are found in all parts of the world from the equator to the polar regions, and to the lowest depths explored by man. But the range of individual species and families is limited by the physical conditions of light, heat, pressure, &c., appropriate to their organization. These tribes which produce the great coral reefs, as the astræas, madrepores, meandrinas, &c., are developed with peculiar luxuriance in the warmest parts of the Pacific, where the temperature varies from 80° to 85°; but they are also found in waters as cold as 72°, and in other oceans and seas. The range in depth of the reef-forming corals appears to be limited to

120, or sometimes to only 100 feet. Mention has already been made in the article Atoll of the wonderful extent of the coral reefs of the Pacific, where they are traced in unbroken barriers for hundreds of miles; and also of the singular form of many of them arranged in circles around deep basins. When solidified in the progress of time by the pressure of the strata that gather over it, this coral formation will be found to differ in no important particular from the great limestone strata which are spread over large portions of the western states, and testify by the corals they contain, and the other fossils associated with them, to a similar mode of production. The fine white mud which forms from the decomposition of the softer corallines of the Bermudas, it is stated, cannot be distinguished when dried from the ordinary white chalk of Europe; and this is now spread over the bottom of the sea by the currents which easily waft it to great distances. Throughout the long series of the geological formations produced by aqueous deposition, back to those of the silurian period, the agency of the marine polyps is traced in the production of the calcareous strata. Unmistakable coral rocks of recent production are met with in the islands of the Indian ocean, hundreds, and even thousands of feet above the level of the sea. In the tertiary formations ranging along our own coast, and extending in the Carolinas 50 miles or more back from it, coral of various species, as perfect as specimens brought from the East Indies, is continually dug from the marl pits to be spread upon the surface to fertilize the soil, together with multitudes of shells, such as now belong to warmer latitudes. The limestones of the green sand formation of New Jersey are made up of the same materials, and so are those belonging to the same geological group found far up the Missouri river, where the specimens of shells and coral equal in beauty those brought fresh from the living reefs of the Pacific. Teeth of sharks and of other fishes are scattered with the shells throughout the rocks of these districts, precisely as they are now left by the fishes whose remains lie entangled among the reefs which were their pastures. All the fossiliferous groups thus contain in their calcareous strata evidences of their coralline origin. Even when the character of the limestone is greatly changed by metamorphic agencies, and its fossils obliterated, its real nature is traced through successive gradations; and its chemical composition, and that of the minerals it contains, are such only as might be derived from the constituents of coralline rocks. The presence of magnesia in the magnesian limestones cannot, however, be thus explained. Thus the solid marbles (excepting the dolomites) quarried from the midst of rocks of granite, and apparently as far removed in their origin as these from the agency of organic bodies, are traced back to the digestive operations of the coral polyps, by which they were separated atom by atom from the waters of the ocean, and converted into durable rock. By analysis of different varieties of coral, they are found to consist of salts of lime, &c., such as belong to sea water. The presence of fluorine was indeed discovered in the coral by Prof. Silliman, jr., in his elaborate investigations into the composition of the corals, before its existence in sea water was determined, as it has since been. Carbonate of lime is the principal ingredient, ranging from 91 to 95 per cent. With it are found a small proportion, usually about 4 per cent., of animal matter and other ingredients, all met with in every analysis, rarely amounting to more than two per cent., and frequently less than one. These are silica, lime, magnesia, fluoride of calcium, fluoride of magnesium, phosphate of magnesia, alumina, and oxide of iron. The soluble salts of sodium, which form the greater part of the solid matters contained in sea water, are rejected by the polyps, and only those materials are made use of which are best fitted for producing the most substantial structures. By their removal, the waters of the ocean are kept of uniform composition. The soluble impurities poured into them by every river, but for some such provision, would accumulate, as the fresh water alone is carried off by evaporation. The coral insects and marine shells are the agents appointed to keep pure the waters of the great deep, to take up and store away the excess of the lime salts, and preserve the balance in this department of nature, as the vegetable growth performs a similar office in keeping down the excess of carbonic acid in the atmosphere. The great ocean currents spread all the waters among the coral groves, as the winds convey the air through the forests. The mightiest forces of nature are thus made to administer food to the tiny polyp and the most insignificant shrub.

CORAM, Thomas, an eminent English philanthropist, born about 1668, died in 1751, spent the early part of his life as a sea captain. His business frequently leading him into the poorer parts of London, he saw many children abandoned and cruelly exposed, sometimes in a dying condition. This exciting his compassion, he projected the foundling hospital, in which design he labored 17 years, and at last procured a royal charter. He was also instrumental in promoting American trade by procuring a bounty on naval stores from the colonies, and by interesting himself in the settlement of Georgia and Nova Scotia. He died while perfecting a scheme for the education of Indian girls. Having spent the greater part of his life and property in laboring for the public good, an annuity of £100 was raised for him by subscription in his old age.

CORAY, Adamantios, a modern Greek author, born in Smyrna, April 27, 1748, died in Paris, April 6, 1833. Educated a merchant, he was also an ardent student and profoundly learned in the ancient and modern languages. While yet a young man he was intrusted with the care of a branch of his father's mercantile house in Holland, and remained in Amsterdam 6 years, allowing himself no recreation from business, except 2 lessons a week in mathematics and philosophy. He returned to Smyrna in 1779, a few days after a great conflagration which had destroyed the warehouses and residence of his father. He now determined to renounce commerce, and for 6 years devoted himself to the study of medicine at Montpellier, in France. His parents dying in poverty a year after he left Smyrna, he was obliged to support himself by translating English and German medical works into French. He went to Paris in May, 1788, and though he took no part in the revolutionary agitations of the following period, he became so fired with zeal for the liberty of his country that the remainder of his life was devoted to that object. He endeavored to arouse the Greeks to action, and published, in a series called the "Greek Library," a variety of ancient Greek works calculated to excite their patriotism, among the most celebrated of which were the editions of the Ethics and Politics of Aristotle. He was employed by Napoleon in a translation of the geography of Strabo. The emperor conferred on him a pension, only a portion of which Coray would consent to receive.

CORBAN, a Hebrew word occurring in the Greek of the New Testament (Mark vii. 11), where it is translated a "gift." It designates an oblation to God, and has reference to a Talmudic formula, by which, under pretence of dedicating any thing, as his property, to God, a person might prohibit the use of it from the party to whom it was thus made corban.

CORBAUX, Fanny, an English artist and distinguished Biblical scholar, born in 1812. When she was about 15 years of age, her father suddenly became reduced to poverty, and without having received any but the most superficial instructions in drawing, she determined to support herself and him by painting. So severe and well directed were her labors, that in the same year she received 2 silver medals for water-color drawings, and within the next 3 years another silver medal and the gold medal of the society of arts. She had been all the time her own instructor. After that she painted small pictures in oil and water colors, but has confined herself chiefly to portraits. As a Biblical scholar she has written a valuable series of letters on the "Physical Geography of the Exodus," and another entitled the "Rephaim."

CORDAY D'ARMANS, Mariane Charlotte de, a French heroine, born at St. Saturnin des Lignerets, in the department of Orne, July 28, 1768, guillotined at Paris, July 17, 1793. Her father was a poor Norman nobleman of literary tastes, and author of works of a republican tendency. Charlotte's mother died during her early youth; her 2 brothers entered the army; one of her sisters died young, and she and her remaining sister were placed by their father in a nunnery at Caen. There she became a favorite of the abbess, Madame de Belzunce, and her assistant, Madame Doulcet de Pontécoulant, who occasionally gave parties to their intimate friends, to which Charlotte was admitted. Among the visitors was M. de Belzunce, a young cavalry officer, between whom and Charlotte a tender feeling sprung up. Charlotte was intellectual, vehement, and enthusiastic; she devoured Rousseau's *Héloise*, sympathized with the heroes of antiquity, and entertained the most exalted ideas of the duties of patriotism. An event which made a deep impression upon her mind was the assassination of the young officer she loved by the mob of Caen, and she vowed revenge against those whom she conceived to have instigated the murder. After the revolution had closed the doors of the convent, Charlotte removed to the house of her aunt, Madame Coutellier de Bretteville Gouville, an old royalist lady. Many Girondists had fled to Caen, among others Barbaroux, and Charlotte found a pretext for calling upon him. The conversation chiefly turned upon the tragic fate of the Girondists, upon Madame Roland, and upon Marat, for whom she had long felt a horror. One morning her aunt found a Bible lying open on her bed, and the following lines: "The Lord hath gifted Judith with a special beauty and fairness," were underlined. On another occasion, she found her weeping bitterly, and on questioning her about her tears, Charlotte replied: "They flow for the misfortunes of my country." On the morning of July 9, 1793, she suddenly left the house of her aunt, on pretext of a journey to England. On the 11th she was in Paris. She took a room in the hôtel de la Providence, rue des Vieux Augustins, not far from Marat's dwelling. For 2 days her mind was undecided as to whether Marat or Robespierre should fall, when Marat's journal, *L'ami du peuple*, in which he said that 200,000 more heads must be lopped off in order to secure the success of the revolution, fixed her determination. She addressed a letter to Marat soliciting an audience, in order to acquaint him with the plots of the Girondists at Caen. No answer came, and on the morning of July 13, after having purchased a knife in the Palais Royal, Charlotte called upon Marat, who then resided in a gloomy house in the rue des Cordeliers. She was refused admittance. She wrote a 2d note, and called again at half-past 7 the same evening. The porter, seeing her pass by his lodge without making any inquiry, called her back. But Charlotte passed on and ascended the staircase. Marat's mistress, Albertine, opened the door, and on beholding again the same young woman who had called during the morning, rudely refused to admit her; Charlotte insisted; the sound of their voices reached Marat, who consented to see her. Charlotte was ushered through 2 other rooms to a narrow closet, where Marat was just taking a bath. He listened to her report of the proceedings of the Girondists, and taking down their names, remarked with a smile that "within a week they will all go to the guillotine." "Then words sealed his fate," said Charlotte afterward. Drawing from beneath the handkerchief which covered her bosom the knife she had concealed there, she plunged it to the hilt in Marat's heart. He gave a loud cry and sank back dead. The news of the murder soon spread. The room became crowded with people, and as they gazed upon the beautiful girl, who looked serenely and calmly upon the general confusion, they could hardly believe that she was the assassin. She was transferred to the nearest prison, the Abbaye. Her trial took place on the morning of July 17; she was sentenced to death, and guillotined the evening of the same day. During her trial and during the execution her courage did not forsake her for a moment. She declared that her project had been formed since May 31, when the Robespierre party had pronounced the doom of the Girondists, and that she had killed one man in order to save a hundred thousand. Her remarkable beauty, and her lofty bearing on her way to the guillotine, sent a thrill even through the hearts of her executioners. One young German enthusiast, Adam Lux, a deputy from the city of Mentz, on witnessing the execution, conceived a romantic passion for her, and when her head fell, he cried with a voice hoarse with emotion: "She is greater than Brutus." He wrote a pamphlet, suggesting that a statue with such an inscription should be erected to her memory. He was arrested and guillotined. André Chénier, who had paid a glowing poetical homage to her heroism, shared the same fate before a year had elapsed. When Vergniaud was informed of Charlotte's death, he exclaimed: "She has killed us, but she teaches us how to die."

CORDELIERS. I. A name given in France to the friars of the Franciscan order, in allusion to the cord tied with 3 knots which they wear as a girdle. The title is said to have originated in the time of the crusades, when St. Louis, struck by their prowess in battle with the infidels, asked their name, and was told that they were *cordeliez*, or "tied with cords." (See Franciscans.) II. A political club during the first French revolution, which received the name of Cordeliers from the fact that its members met in the chapel of the old convent of the Franciscan friars situated near the rue de l'École de Médicine and the rue de l'Observance, in the centre of the quarter of Paris known as the Cordeliers' district. The club of the Cordeliers became the focus of the wildest agitators, while at the same time it was constantly quarrelling with the Jacobin club. The leading events of the reign of terror may be traced to the conflict of the 2 clubs, and chiefly to the influence of the Cordeliers, of whom Marat and Danton were the ruling spirits. At the time the club was in its zenith, Camille Desmoulins edited a popular journal in connection with it, under the name of *Le vieux Cordelier*, without however identifying himself completely with the politics of the formidable club. After the execution of Danton, Hébert, and Chaumette, the club declined in influence, and was closed by the law of 6th Fructidor, or Aug. 23, 1795, which dissolved all the political clubs of France.

CORDILLERA, a Spanish word meaning a mountain chain or ridge. It is commonly applied to the whole or a portion of the chain of the Andes, as *La Cordillera de los Andes*; *La Cordillera de la Costa*, the chain which runs near the Pacific coast; *La Cordillera Real*, the northern prolongation in Venezuela and New Granada of the main interior chain. Some authorities consider the Cordilleras of Central America and those extending northward near the Pacific to the frigid zone as the continuation of the Andes (as already stated in our article on Andes), forming with them one range from the Antarctic to the Arctic ocean, and that hence they should be described under one common name. But the break at the isthmus of Panama, the only one in the whole chain between this point and the straits of Magellan; the splitting up and diverging course of the ranges of the Andes as they approach the northern limits of South America; and the fact that the comparatively low elevation of the narrow strip forming the isthmus can at the most be called the continuation of the inferior Cordillera of the coast, taking on the other side of the break an entirely new course, as it sweeps round to N. W.; these lead others to the conclusion that the mountain ranges of North and South America are too distinct from each other to be classed as one range, notwithstanding they are connected by the continuation throughout their extent of the same great geological formations. However this may be determined, as the South American Cordilleras have been treated under the term Andes, the ranges through Central America and Mexico may for want of another generic name be described under the head of Cordilleras, a term commonly applied to any portion of them in Spanish states; while to their extension further north the name Rocky Mountains is given.—Upon the isthmus the Cordilleras present the lowest and narrowest barrier between the two oceans. The distance across varies from 30 to 70 m. The railroad constructed from Aspinwall on the Atlantic side to Panama on the Pacific coast traverses the isthmus in a length of 49 m., ascending to the summit level only 300 feet. It is said that the summit level between Port Escosces on the Atlantic and the mouth of the Savanna in the harbor of Darien is only 150 feet above the sea; and this point is suggested as the most favorable for a ship canal between the two oceans. Yet the mountains, as they are seen from the sea, present the appearance of continuous ranges of great height, the overlapping of the different ridges concealing the gaps, as also the valleys and low lands, and thickly wooded undulating plains, that lie between the mountains. The unhealthiness of this portion, the incessant rains that fall during a considerable part of the year, the almost impenetrable nature of its dense forests, and the inhospitable disposition of the native Indians that occupy the territory, have prevented its resources in the valuable timber of the tropics, and in the gold and copper ores of the mountains, from being developed, although the abundance of these products is fully established. The adjoining country to the N. W., called Costa Rica, is so named from the richness of the gold mines found in the Cordilleras, as they spread over its surface in spurs diverging northward from the great central chain. These ridges present their steep slopes toward the Pacific; on the Atlantic side they fall away more gently. The San Juan river finds its way through them from Lake Nicaragua to the Atlantic, the main range, called the Alto Grande, continuing to the N. E. of this lake and of the adjacent smaller lake, Managua. On the other side a straight and narrow mountainous belt separates these lakes from the Pacific, which belt is so unbroken, that though the waters of the lakes and the ocean approach within 12 m. of each other, and a stage road passes across from Rivas to San Juan del Sur, yet no favorable locality appears to exist for the construction of a ship canal, even if the rapids of the San Juan in its passage through the Cordilleras were so improved as to form a part of the interoceanic communication. Along this western range occur several volcanoes and many extinct craters and beds of lava, though the real volcanic belt lies a little further east, passing through the western portion of the two lakes. The central basin between the two outer mountain ranges, including the two lakes, and extending about 300 m. in length by about 150 in width, comprises the fine state of Nicaragua, a country presenting the greatest diversity of beautiful scenery. The rugged mountains on each side are the frames in which are included the broad fertile plains and the large lakes, one of which extends in a parallel direction with the mountains a distance of about 100 m. From its surface and on its shore huge volcanoes rise abruptly to the height of several thousand feet; others appear ranged along the same line, disturbing the smooth contour of the vast plains, above which they stand dark and gloomy, their sides rent with the deep volcanic fissures and black with their covering of ancient lavas. The shores of the lakes are covered with the dense vegetation of the tropics, while the broad slopes of the Alto Grande overlooking them are the open grazing lands for countless herds of cattle. Beyond these, along the summits of the great range, and upon the sources of the streams which flow into the Atlantic, is the mineral region of Chontales, Matagalpa, and Segovia, extending further northward into Honduras. The mines were worked for gold by the early Spanish settlers, and are still made to yield their products to the rude machinery of the native Indians; little is known of their real value, however, and still less of that of the silver mines reputed to exist in the same region. The geological formations of the western portion of the basin appear to be almost wholly of a volcanic character, as basaltic rocks and lava, with limestone and a calcareous breccia formed in great part of volcanic products. The volcanoes still emit smoke and sometimes flame from their summits, but streams of lava are rarely known to flow from them. Some of the larger, as that of Momobacho (about 5,000 feet high) on Lake Nicaragua, a few miles S. of the city of Granada, are regarded as extinct. The volcanic cone of Ometepec, upon an island in the same lake, is very regularly shaped, and, like the neighboring summit of Madeira, rises to a greater height than Momobacho. The volcanoes El Viejo and Momotombo, to the N. W. of Lake Managua, are supposed to be about 6,000 feet high. The climate of this portion of the Cordilleras is described as salubrious and of moderate temperature, cooled by the trade winds after these have shed a considerable portion of the moisture they come charged with from the Atlantic upon the easternmost ridges of the range. The rains are therefore not excessive even during the rainy season, which extends from May to November. The thermometer during this season rarely sinks by night so low as 70° upon the plains, or rises in the day to 90°. In the dry season the temperature is somewhat lower, and the nights are positively cool, especially upon the mountains. —Through Honduras, San Salvador, and Guatemala the Cordilleras continue with little variation of character. On the E. they send out spurs toward the Atlantic, and the inferior volcanic range still skirts the Pacific. Five volcanoes are enumerated in San Salvador, the most active of which is Yzalco, and the 2 highest, San Vicente and San Salvador, are each estimated to rise to an elevation of 9,000 feet. In Guatemala 6 volcanoes are recorded to be in activity, viz.: Picaya, Fuego, Agua (so named from its pouring forth torrents of water), estimated to be 1[illegible] feet high, Atitlan, 12,500 feet, Sapotitlan, 1[illegible] feet, and Amilpas, 13,160 feet. Earthquakes are frequent throughout this region. Even in the cities the houses are built of one story only, as a measure of precaution. Upon the main range of the mountains, in the department of Tegucigalpa in Honduras, at the source of the Patook, which flows into the Atlantic, it is stated that no less than 40 silver mines are found within a circuit of 30 miles radius. From want of enterprise in the inhabitants they are worked to little advantage. Near the Pacific coast copper ores are found abundantly, but they too are neglected. They are also met with in the Lepaguare valley in the department of Olancho, and were formerly worked to supply the mint at Tegucigalpa, the ores being carried 8 days' journey upon the backs of mules. These regions produce in great abundance valuable mahogany, rosewood, red cedar, boxwood, India rubber, vanilla, cochineal, sarsaparilla, &c., large quantities of most of which are floated down the Patook to the Atlantic coast. The temperature of the interior region is never excessive; the thermometer during the dry season from November to February seldom rises above [illegible]° F. at noon, or falls below 55° in the morning. During the summer wet months at Jutecalpa, considerably to the eastward of the main range and below its summits, the nights are said to be always cool, and the extreme temperature of the day is below 95°.—Passing from Guatemala into Mexico, the mountain ranges diminish in height. At the isthmus of Tehuantepec one may pass from ocean to ocean over a summit not more than 700 feet high. The mountains thence to the northern limits of the state spread out in a vast plateau, the height of which along its middle portion is from 6,000 to 8,000 feet above the sea, and its greatest width near the latitude of the city of Mexico is about 360 m. It extends toward the N. W. at this elevation full 600 m., presenting a smooth surface, mostly unsheltered by the growth of forest trees, though the soil is naturally fertile. Still further north for 900 m. the plateau is traced at an elevation of from 2,000 to 3,000 feet. On either side one descends from this cool elevated region by successive steps to lower plateaus, each descent bringing the traveller into a region of warmer temperature, and of more tropical productions. From the *tierra fria*, or cold region, the first descent is to the *tierra templada*, or temperate tract; the next to the *tierra caliente*, the low lands along the Atlantic coast, hot and unhealthy. So steep are the walls of these plateaus, that for a distance of 500 m. only 2 roads passable by carriages lead from the Atlantic coast into the interior—one passing from Vera Cruz through Jalapa, and the other by Santilla west of Monterey. On the western side the descent is hardly less precipitous, and to the south the great plateau ends abruptly near the shores of the Pacific. The climate of the elevated plateau, though called cold, is said not to differ in its mean temperature (which is about 62° F.) from that of the central parts of Italy. There are some still more elevated tracts, as the valley of Toluca, the height of which is about 8,500 feet above the sea, in which the thermometer, as stated by Humboldt, during a great part of the day rarely rises beyond 45° F. The volcanic mountains, which are still met with along the chain as far as 24° N., rise from the great plateau in stupendous masses, and penetrate with their lofty peaks the limits of perpetual snow. Their range is not, as in the more southern states, near to and parallel with the Pacific coast, but a line of them appears to cross that of the great mountain chain in an E. and W. direction, passing about 16 m. south of the city of Mexico. The most western of them, called Colima, stands alone upon the plain of the same name, situated between the plateau and the Pacific. Its height is supposed to be about 9,000 feet. Smoke and ashes are frequently thrown from its crater, but no lava has been known to flow. Jorullo, upon the western slope of the plateau, 70 m. from the Pacific, is described by Humboldt as suddenly appearing above the surface in the night of Sept. 28 and 29, 1759, after an interval of a few weeks of tranquillity, followed by a succession of earthquakes, which had continued for about two months. A tract covering several square miles rose in convex form above the plain to the height of 524 feet. Flames burst forth from all parts of this area, and burning rocks were thrown with vast clouds of ashes into the air, the softened surface of the earth rising and falling like the waves of the sea. Rivers of water flowing into the chasms caused eruptions of mud to issue from thousands of little cones that appeared upon the surface. In the midst no less than 6 mountain masses were suddenly formed along a chasm ranging from N. N. E. to S. S. W. The principal one of them is the great volcano of Jorullo. Its height above the sea is 4,265 feet; that of the plain upon which it stands is 2,890 feet. Its great eruptions continued till the month of February, 1760; subsequently they became less frequent. A wall of basalt forms the boundary of the upheaved tract, which in most places, especially on the W. side, is too steep to be ascended. The celebrated valley of Mexico, nearly 7,500 feet above the sea, and covering an area of 18 leagues in length by 12¼ in breadth, is encircled by groups of mountains, among which are the famous volcanic peaks of Popocatepetl, Iztacihuatl, and Toluca. The first is the highest summit in Mexico, rising to the height of 17,720 feet above the sea, and 500 feet above the termination of vegetation. Its crater is 3 m. in circumference and 1,000 feet deep, and is in continual eruption. The second is an extinct volcano 15,705 feet high. A chain of small volcanoes connects these with each other, and also with the other volcanoes further east. The Cofre de Perote lies between Popocatepetl and the fiery Orizaba, or Citlaltepetl, "the mountain of the star," a name given to it for the fires that ever issue from its snow-enveloped summit, dispelling as by the light of a brilliant constellation the darkness of the night through the surrounding country. Below the plateau, in the region of low hills near the gulf of Mexico, is the last of the volcanoes upon this line. It is called Tuxtla, is situated a few miles west of Vera Cruz, and was in operation in 1793, when the ashes thrown from its crater were carried as far as Perote, a distance of 57 leagues. The great Mexican plateau, though over a considerable portion as level apparently as the ocean itself, is cleft by deep fissures called barancas, of 2 or 3 m. in length, and often 1,000 feet deep. A brook or small river flows at the bottom, the banks of which are the precipitous and rugged walls of the chasm. Some mountain ranges beside those of the volcanoes rise above the plain, as one bordering it on the eastern side, and the Sierra Madre, which, commencing at lat. 21° N., and extending 60 m. further north, separates it for this distance into 2 portions. Other ridges here unite with it, spreading out into the mountainous district of Zacatecas, celebrated for its rich silver mines. Beyond this the Sierra Madre forms a belt of full 100 m. in breadth of parallel ridges and valleys, extending to New Mexico, where it unites in lat. 38° N. with the southern portion of the Rocky mountains. Between the Rio Colorado and the Rio Grande del Norte some of the summits of the Sierra Madre exceed 10,000 feet in height above the sea, and are continually covered with snow. The geological structure of the Cordillera of Mexico is that of granitic and volcanic rocks, together with the micaceous, talcose, and clay slates, which form a considerable portion of the range, especially in the mining districts. So many of the rich silver mines of Mexico are found in porphyry, that its presence is regarded as particularly favorable for the existence of this metal. It is also found, however, in the metamorphic limestones, and in those called by Humboldt the Alpine and the Jura. In no part of the range of the Cordilleras in North and South America has the production of this metal been so great as in Mexico. It was estimated by Humboldt to be 10 times as great as that furnished by all Europe, and ⅔ of the whole annual production of the globe. The annual yield was rated by him at about 1,541,015 lbs. troy. But of the gold the production was not much greater than that of Hungary and Transylvania, amounting in ordinary years only to 4,315 lbs. troy. The vegetation of the elevated country varies with its height. On the high plains the forests destroyed by the early Spanish settlers have never been renewed, though there are still to be seen fine open groves of gigantic oaks and pines, clear of undergrowth. The plains as seen about the city of Mexico are not always fertile, but have become sterile, and covered in many places with saline incrustations.

CORDOVA. I. A celebrated city of Spain, and capital of the province of the same name, lat. 37° 52' 15" N., long. 4° 49' 37" W., 65 m. from Seville, is situated in a beautiful plain on the right bank of the Guadalquivir, here crossed by a Moorish bridge of 16 arches; pop. 58,000. Cordova is renowned for its picturesque buildings, its beautiful location, and for its unsurpassed cathedral, once a Moorish mosque. The town itself resembles eastern towns in its inconveniently narrow streets, and its want of ventilation and cleanliness. There are several churches and religious houses, a bishop's palace, a theatre, a museum, a lyceum, a *plaza de toros*, and several hospitals. The great mosque of Cordova was founded by Abderrahman I. the Wise, A. D. 786. It was an edifice of marvellous beauty, with a light, elegant roof, springing from clusters of slender pillars, and was lighted with 4,000 silver lamps. There were originally 1,200 pillars, but the Christians have taken away 400 to make an open space suitable for Christian worship. It was the Corduba of the Romans, the birthplace of the two Senecas and of Lucan the poet. It sided with the sons of Pompey, and after the battle of Munda it was taken by Cæsar, when 23,000 of its inhabitants are said to have lost their lives. Its foundation is attributed to Marcellus, the commander in the Celtiberian war (152 B. C.), and being peopled by poor patricians of Rome, it was hence called *Colonia Patricia*. Under the Goths Cordova was called "holy and learned." Osius, the friend of St. Athanasius and the counsellor of Constantine, was its bishop from the end of the 3d to the middle of the 4th century. Under the Moors, Cordova became the Athens of the West, the nurse of science, the cradle of great captains; produced Averroes, Maimonides, and other famous scholars; rose to be the capital of the Moorish empire of Spain, and the seat of the caliphate from 756 to 1031, eclipsing Bagdad by its splendor, and containing in the 10th century nearly 1,000,000 inhabitants, 300 mosques, and 900 baths. After the overthrow of the caliphate, Cordova passed into the hands of various rulers. In the first half of the 13th century it was conquered and almost wholly destroyed by Ferdinand III. of Castile, a blow from which it never recovered. II. The province of Cordova, in the centre of Andalusia, divided into 15 districts, between lat. 37° 12' and 38° 44' N. and long. 3° 55' and 5° 32' W., bounded N. by the provinces of Badajoz and Ciudad Real, E. by the province of Jaen, S. by Granada and Malaga, and W. by Seville and Badajoz, divided into 2 parts (Sierra and Campiña) by the river Guadalquivir, and traversed in the north by the Sierra Morena and the Sierra de Cordova; area, 6,177 sq. m.; pop. in 1857, 362,538. The province is deficient in water, and produces only grain sufficient for local consumption, but yields wine, oil, fruits, hemp, flax, saffron, honey, and wax in great abundance. Fine mules, and some of the celebrated Andalusian horses, are bred in this province. Bees, game, fish, and cattle are plentiful. The annual product of the sale of pigs averages $40,000. There are 107 mines of coal, copper, iron, silver, lead, and argentiferous lead. About 4,000 lbs. of silk are annually produced, and this industry is increasing constantly. III. A city of the Argentine confederation, capital of a province of the same name, situated in a narrow valley on the little river Primero, 387 m. from Buenos Ayres, lat. 31° 35' S., long. 63° 50' W.; pop. recently estimated by Tschudi at 22,000 to 25,000. By its situation it is sheltered from the north and south winds, and, in consequence, enjoys a fine climate during the spring and autumn. In summer, however, it suffers much from the heat. The city is well built, and contains a fine cathedral, the convent of Santa Catalina, and several other interesting buildings, among which is a large university, erected by the Jesuits, which was formerly a celebrated seat of learning, but has since lost its reputation. The Jesuits also collected a fine library here, which, on their expulsion, was removed to Buenos Ayres. Cordova is the centre of communication between Buenos Ayres and the upper provinces.—Cordova the province is the second state in importance of the Argentine republic; bounded W. by Santiago del Estero, E. by Santa Fé &

by the Pampas, and W. by the provinces of Rioja, San Juan, and San Luis; pop. estimated by some authorities at 160,000, by others in 1855 at 90,000. (See Argentine Confederation.) The eastern and southern portions are barren and almost uninhabited; but the rest, especially the valleys of the mountains, are more fertile. The greater part, however, of the wheat consumed by the inhabitants is imported. Many small streams flow down from the Cordova mountains, but most of them are absorbed in the desert. The Tercero, during the rainy season, however, flows into the Carcarañal, and thus into the Parana. The raising of cattle and sheep is the occupation of the greater part of the inhabitants, who live not so much in towns as in the country. Tschudi, the famous traveller, has recently published interesting accounts of the ornithology of Cordova and of its increasing coasting trade. IV. Capital of the district of Cordova, in the Mexican state of, and 57 m. from the city of Vera Cruz, at the foot of the volcano of Orizaba; pop. about 6,500. It is well built, possesses a fine cathedral and a naval academy, has manufactories of cotton, woollen stuff, and leather, and trades in sugar, cotton, and tobacco, the adjoining country being very productive, especially in the latter article.

CORDOVA, Francisco Fernandez de, a Spanish navigator, born in the latter part of the 15th century, died in 1518. He was the discoverer of Yucatan, which he visited in 1517, and had several encounters with the natives. He lost some of his men, and two were taken prisoners and carried up the country. Shortly after his return to Cuba he died· but the account he gave of his discoveries led to a new expedition under Juan de Grijalva, to whom was subsequently assigned the honor of the discovery.

CORDOVA, José M., a South American general, born at Antioquia, New Granada, about 1797, slain Oct. 17, 1829. At the age of 15 he left his father, who belonged to the Spanish party, and joined a band of guerrillas, among whom he soon became noted for his intrepidity in their contests with the Spaniards. At the battle of Boyaca, Aug. 8, 1819, he won the rank of colonel. Not long after he was appointed general, and distinguished himself at the battle of Ayacucho, after which he was made general of division on the field. In Sept. 1828, he became head of the war department of the republic of Colombia, under Bolivar, but, a year afterward, revolted against him. He found but few adherents, however, and being attacked, Oct. 17, by a force greatly superior to his own, was slain with most of his followers.

CORDOVA, Luis Fernandez de, a Spanish general, born in Cadiz in 1799, died in Lisbon, April 29, 1840, took a prominent part in the movement of 1820 as a constitutionalist, and in that of July 7, 1822, as an absolutist. He officiated afterward on diplomatic missions abroad, and eventually deserting the forlorn cause of Don Carlos, he espoused that of Christina and Isabel, took a distinguished part in the battle of Mendigorria, was appointed commander-in-chief of the Christinos as successor of Valdez, but unable to finish the war, he was driven from office after the movement of 1836, and fled to France, whence he soon returned to Spain. He now conspired with the party of Narvaez against Espartero, but retired to Portugal when the latter came into power.—Fernando Fernandez de, a Spanish general and statesman, brother of the preceding, born in Madrid in 1792, entered the military service in 1810, and was rapidly promoted during the war with Napoleon. In 1841 he was implicated with Gen. Concha in the movement instigated by O'Donnell against Espartero. In 1847 he officiated for a short time as minister of war, and was appointed inspecting general of the infantry. Two years afterward he was sent to Gaeta in Italy at the head of an army to aid in the restoration of the pope. On March 8, 1850, he was nominated captain-general of New Castile, in the following year to the same position in Cuba, and in 1853 general-in-chief of the cavalry. Immediately after the outbreak of the revolution of 1854, he was called upon by Queen Isabel to form a new cabinet. This he declined, but he ordered his soldiers to fire upon the insurgents, and when the latter proved victorious, he fled to France in the night of July 27. In 1856 he returned to Spain, and was reinstated in his position of general, without, however, resuming active service.

CORDOVAN, a kind of fine leather, takes its name from Cordova in Spain, where it was originally made by the Moors. It is now made principally in the Barbary states.

COREA, a kingdom on the E. coast of Asia, N. E. of China; area about 90,000 sq. m.; pop. from 10,000,000 to 12,000,000. It comprises a peninsula 400 m. long and 150 broad, the islands adjacent, and a part of the neighboring continent. Total length of the country from N. to S. somewhat less than 600 m., between lat. 33° 20′ and 43° N. The coast is rugged and barren, and the N. portion cold and mountainous, but in the W. part the climate is more genial and the soil more fertile. It produces fruits, cotton, wheat, rice, millet, tobacco, ginseng, hemp, and legumes. There are mines of gold, silver, iron, copper, and coal, and rock salt is also found, but the inhabitants are mostly occupied with agriculture and the raising of cattle and horses. Cotton, silk, arms, and paper are manufactured. Paper they use for hats, umbrellas, and cloaks, and for various other purposes, and large quantities of it are exported to China. The only foreign trade is that carried on with China and Japan, and this is not very extensive. There are some disciples of a religion similar to that of the Sin-tu in Japan, and some followers of Confucius, but the predominant religion is Buddhism. The government is despotic, and though tributary to China and Japan, the freedom of its action is uncontrolled. The army of until Feb. 21, 1858, when it was destroyed by an earthquake. Mr. Bayard Taylor, who visited it soon afterward, found the greater part of the city in ruins, and deserted by most of its inhabitants, who had numbered about 4,000. The modern Corinth was the seat of an archbishop, and was noted for its flourishing trade in raisins and other articles.—The origin of Corinth dates far back, and is lost in mythical obscurity. An ancient tradition represents it to have been founded by Ephyra, daughter of Oceanus, whose name it bore till Corinthus, the reputed son of Zeus, having greatly improved and enlarged it, gave it his own name. The territory of Corinth, known as the Corinthia, extending around the city on every side, was of very limited extent. It was bounded N. by Megaris, E. by the Saronic gulf, S. by Argolis, and W. by Sicyonia. It was for the most part mountainous and barren; the rocky sides of the Geraneian range on the N., the sandy plain of the isthmus, and the rugged Oneian hills, offered no reward for the labors of the husbandman. The only truly good land in the territory was found in the plain on the N. W. of the city, extending along the coast in the direction of Sicyon; a plain so celebrated for its fertility, that to possess "what lies between Corinth and Sicyon" became in ancient Greece a proverbial expression for great wealth. The dense population of the Corinthia could not, of course, be supported from the productions of its soil; and accordingly, applying themselves to commercial pursuits, they early made Corinth one of the first maritime powers of Greece. Their merchant vessels carried commerce westward over the Ionian seas, and along the shores of the Mediterranean, while eastward they traversed the Ægæan, and visited the Hellespont and the Pontus. The trade of the East and of the West met in the great emporium of Corinth. The most striking natural feature in the Corinthia was the Acrocorinthus, the Acropolis of Corinth. This is a rocky hill rising abruptly in its isolated grandeur to the height of 1,885 feet, and is the *arx in immanem altitudinem edita* of Livy. Col. Mure remarks of it, that "neither the Acropolis of Athens, nor the Larissa of Argos, nor any of the more celebrated mountain fortresses of western Europe, not even Gibraltar, can enter into the remotest competition with this gigantic citadel." On the N. side of this stood the ancient city, which was 5 miles in circumference, though its entire perimeter, enclosing the Acrocorinthus, was upward of 10 miles. It was situated some little distance inland from either coast, but had 2 excellent port towns, viz.: Lechæum on the gulf of Corinth, with which it was connected by means of "long walls," and Cenchreæ on the Saronic gulf. Of the topography of the city as it existed in the flourishing periods of Grecian history, we are comparatively ignorant; though of the Roman city afterward built upon its ruins we have much fuller accounts. Ancient Corinth, we are assured, was one of the finest cities in all Greece; it was adorned with the most sumptuous buildings; its public squares and temples, its theatres and porticoes, were famed in antiquity. For much of our knowledge of this interesting city we are indebted to Pausanias, who visited it in the 2d century of our era. In the port Lechæum, he specifies the temple of Neptune and a brazen statue of that god, and at Cenchreæ a temple of Venus and a stone statue. He describes the agora or forum as surrounded by temples and adorned with columns and statues. In this stood the statues of Bacchus and of Diana of the Ephesians; here too was the temple of Fortune, with its statue of Parian marble; here the temple dedicated to all the gods, adjoining which was a fountain surmounted by a brazen Neptune. Near by stood statues of Apollo Clarius and of Venus; also 2 of Mercury and 3 of Jupiter; while conspicuous among them all, in the very centre of the agora, stood a Minerva of bronze on a pedestal adorned with a beautiful bass-relief of the muses. Such was the agora. North of this was the Propylæa, surmounted by two gilded cars, the one bearing Phaëton, the other the sun. Beyond stood a brazen Hercules, near which was the celebrated fountain Pirene, so called from a nymph fabled to have dissolved in tears at the death of her daughter, who had been accidentally slain by Diana. This fountain, constructed of white marble, was celebrated for the salubrity of its waters, which issued from artificial caverns, and were collected in an open basin. This was so celebrated in antiquity, that Pindar characterizes Corinth as the "city of Pirene;" and the Delphic oracle, according to Herodotus, speaks of the Corinthians as "those who dwell around the beautiful Pirene." The ascent to the citadel was lined on either side with temples and altars, 9 of which are mentioned by Pausanias; while on the summit itself stood the famed temple of Venus, to which goddess the entire Acrocorinthus was especially consecrated. In the days of Corinthian luxury and opulence, this shrine is said to have been attended by 1,000 female slaves. On the street which led from the agora to Sicyon stood the temple of Apollo, some traces of which still remain in the N. W. outskirts of the modern town. Leake, in commenting upon these ruins, says: "The temple seems to have been a hexastyle about 75 feet in breadth. . . . . Its dimensions and its situation, which is one of the most beautiful and commanding in Greece, show that it was one of the chief, or rather the principal temple of the lower city. . . . . The temple of Neptune was the chief building at the isthmus; that of Venus occupied the summit of the Acrocorinthus; the temple of Apollo, therefore, was probably the chief sacred building in the lower town of Corinth."—The earliest rulers of Corinth are represented as Æolians, though a large proportion of the population were no doubt Ionians. The reputed founder of the ancient dynasty was Sisyphus, whose avarice and cunning have been interpreted as typifying the commercial enterprise and habits of a rude, unscrupulous maritime people. Under this dynasty the city is represented to have been very prosperous, and to have grown in wealth and power. For the first really historical fact in the annals of this ancient city, we are indebted to Thucydides, who tells us that the Dorian invaders, as they descended to the conquest of the Peloponnesus, took possession of the hill Solygia, near the Saronic gulf, from which they carried on war against the Æolian inhabitants of Corinth, till they reduced the city. Aletes, their leader, became the first Dorian king, and the founder of a dynasty, which, continuing through 12 generations, according to tradition, ruled upward of 300 years. During this period, Corinth, though thus ruled by Dorian kings, and regarded as a Dorian city, did not by any means conform to all the severe institutions of the Dorians; the commercial connections and importance of the city, the luxury and wealth which foreign trade introduced, exerted a powerful influence upon the fortunes of the state. In the year 747 B. C., the powerful Dorian family known as the Bacchiadæ succeeded in abolishing royalty, and in electing one of their own number as annual prytanis, or president. Thus was established an oligarchy which lasted till 657 B. C., when it was overthrown by Cypselus. Under the Bacchiads, we find Corinth at the very dawn of Grecian history already distinguished for commercial enterprise, wealth, and power; then she stood preëminent even among those cities which in the meridian ages of Grecian glory far surpassed her in greatness and power. It was under the Bacchiads that Syracuse and Corcyra were colonized by the Corinthians; it was probably under them also that the first navy of triremes, or war galleys, was launched upon the Grecian waters. Thucydides expressly assures us that the Corinthians were the first of the Greeks who made use of triremes or galleys with three banks of oars. Cypselus overthrew the Bacchiad dynasty by espousing the cause of the people against the nobles, and then made himself despot of the city, thus establishing a new dynasty, which for a period of 74 years ruled Corinth with great energy and skill. The sway of Cypselus was mild and popular; that of Periander, his son and successor, cruel and oppressive. But both these rulers unquestionably did much to advance the prosperity and power of the state. The numerous Corinthian colonies planted under their sway fully attest the growing strength of the city; and indeed, at no period in its long and eventful history was Corinth more respected, whether by friend or foe, than under their rule. Periander also patronized letters and art. He took delight in the company of the learned, and welcomed to his court the poet Arion and the philosopher Anacharsis. By some he was classed among the seven sages of Greece. Psammetichus, the last of the despots of Corinth, was undoubtedly deposed by the Spartans, who were ever the avowed enemies of the Grecian despots. From this time Corinth became the firm ally of Sparta, and a prominent member of the Peloponnesian confederacy. Its government became a mild and moderate aristocracy, and long enjoyed the greatest internal tranquillity. Its relations to Athens were also entirely friendly, till the growing prosperity and power of the latter state subsequent to the Persian wars began to excite jealousy. Megara was long a subject of contention between them; and when at length Athens extended a helping hand to Corcyra against the mother city, Corinth, aroused to bitter hate, exerted all her influence to induce the Peloponnesian confederacy to declare war against her powerful enemy. Thus commenced the Peloponnesian war, throughout which Corinth acted an important part; at first, indeed, she furnished almost the entire Peloponnesian fleet. Her great object was to humble Athens; and so implacable was her hatred, that when the peace of Nicias was concluded in the year 421 B. C., she positively refused to ratify it; and when at length she saw the power of her great enemy broken in the disastrous defeat of Ægospotami, she urged the confederacy to raze the city to the ground. But Sparta, more magnanimous to her fallen rival and foe, would not consent that "one of the eyes of Greece" should be thus put out. But it was not long before the Spartans, rendered haughty by their victories, began in their turn to excite the jealousy of the other Grecian states; and the Corinthians were ready at once to unite with the Bœotians, the Argives, and even their mortal enemies the Athenians, in a war against them. This contest, known in history as the Corinthian war, lasted from 394 to 387 B. C., when the infamous peace of Antalcidas restored Corinth to the Lacedæmonian alliance, to which she remained faithful in the Theban war. In [illegible] Timophanes, attempting to establish tyranny, was killed by his brother Timoleon. After the battle of Chæronea, the Macedonians took possession of the city, and stationed a strong garrison in the fortress of the Acrocorinthus; but after the defeat of Philip at Cynoscephalæ, 197 B. C., Corinth, now declared free by the Romans, was again united to the Achæan league, which it originally joined 143 B. C. At the head of the league, Corinth struck the last blow in defence of Greece, and then fell herself before the conquering legions of Rome, in the year 146 B. C. Mummius, the Roman consul, on entering the city as victor, put the men to death, and sold the women and children into slavery; he plundered the city of its precious treasures, and consigned it to the flames. From this time Corinth remained desolate for a century, when a colony was planted there by Julius Cæsar, which made it once more a prosperous and populous city. It was of course this Roman city which St. Paul visited a century later; but nothing in the entire history of Corinth will be pondered with deeper interest by the Christian, than the simple fact that the great apostle to the gentiles made it for almost two years his home, and that he here founded that important church to which he afterward addressed two epistles. Roman Corinth finally shared the fate of its predecessor, and fell before the devastating march of Alaric the Goth. In modern times, it was taken in 1458 by Mohammed II., transferred to the Venetians in 1687, and retaken by the Turks in 1715, who held it until 1823, when with the Greek revolution it passed into the possession of modern Greece.—Corinth in the day of Grecian greatness was distinguished more for commerce and the arts than for war. Architecture was early cultivated; sculptors and artists were honored and rewarded. Corinth not only gave name to the most elaborate order of Grecian architecture, but also claimed the honor of having invented the art of painting. "One of the earliest works of Corinthian art, which retained its celebrity in later times, was the celebrated chest of Cypselus, made of cedar wood and adorned with figures. It was dedicated at Olympia, where it was seen by Pausanias, who has given a minute description of it. The Corinthian vases of terra cotta were among the finest in Greece; and such was their beauty, that all the cemeteries of the city were ransacked by the colonists of Julius Cæsar, who sent them to Rome, where they fetched enormous prices." The Corinthians were not distinguished in the field of literature. Under Periander, indeed, letters enjoyed a brief period of favor, but were ever after left to languish in neglect.

CORINTHIANS, EPISTLES TO THE, two canonical epistles of the New Testament, ascribed by the unanimous testimony of Christian antiquity to the apostle Paul, and addressed by him to the church which he had planted at Corinth, about A. D. 52. The first was written from Ephesus between A. D. 56 and 58. It was designed to rebuke party divisions, and consequent disorders which had arisen in the Corinthian church, and also to give decisive judgments on certain practices, in regard to which the Corinthian converts had been affected by the proverbial immorality of the place. "Every one of you," Paul wrote to them (i. 12), "saith, I am of Paul, and I of Apollos, and I of Cephas, and I of Christ." Critics have not been able to distinguish certainly the doctrines which characterized the respective followers of these 4 teachers, and from allusions in Clement's epistle, it appears that the parties were of short duration. Many suppose that the party of Apollos favored a Hellenico-philosophical tendency, and adopted Alexandrian forms of thought; that the followers of Peter encouraged the tendency, common in the early churches, to engraft upon Christianity the ritual and restrictions of Judaism; and that the Christine party sprang from a reaction against the authority of the later teachers and in favor of the pure doctrine of Christ. In the first 4 chapters, the apostle condemns their assumption of wisdom, and disposition to glory in men, and urges them to unity on the foundation which is laid in Christ. In the remainder of the epistle, he censures the church for having tolerated immoralities, condemns lawsuits between Christians before heathen judges, and in answer to queries proposed to him by the Corinthians, gives various instructions concerning marriage and celibacy, the use of meat which had been offered to idols, the exercise of supernatural gifts, and the proprieties of public worship. The epistle closes with an elaborate exposition of the doctrine of the resurrection, and with general greetings. The second epistle has been much admired for its oratorical structure. The occasion of it seems to have been less special, at least less urgent; for he congratulates the disciples on the effect of his former censures, which had produced a godly sorrow, and a revival of proper discipline. The burden of the second epistle is to commend them for their steadfastness, to rejoice in the conviction that he had labored with them in all sincerity and with all zeal, and to apologize to them for what might appear to be a foolish pride. It vindicates the character and effects of the religion which he had proclaimed, and his own dignity and authority as an apostle, apparently with reference to anti-Pauline influences which were still operating in the church. This 2d letter was probably written from Philippi, and about one year after the sending of the first.

CORIOLANUS, the name of honor bestowed by the Roman people on the patrician Caius or Cneius Marcius, for the illustrious conquest of Corioli, a Volscian town. Young, brave, and arrogant, he was a leading member of the senate during the dissensions which followed soon after the establishment of the tribunes. Having been rejected as candidate for the consulship, he was so exasperated against the people, that during the great famine which then occurred, he proposed in the senate the retention of grain sent from Sicily until the plebeians should consent to sacrifice the new magistracy created for the defence of their rights (491 B. C.). To revenge the people, and their own dignity so violently assailed, the tribunes summoned him before their comitia. He refused to appear; tumults and disputes followed, and finally a complaint was made against him by the tribunes in the senate, which referred the cause to the assembly of the people. The efforts of his colleagues to save him were all in vain, and he was condemned to perpetual exile. He left Rome, but made his way to Antium, the capital of the Volsci, took the command of their army, ravaged the Roman colonies, conquered the towns of the Latins, their allies, and compelled this people to join him. The attack was so sudden, the terror of his arms so great, that hardly any resistance was made by the Romans. He penetrated to Rome, and ravaged from his camp at the Cluilian dike the lands of the plebeians, sparing those of his own order. The terrified plebs now entreated the senate to revoke the decree of banishment; the senators refused to compromise the dignity of Rome, but were finally compelled to yield. Five consular and other distinguished citizens carried the decree of recall into the camp of Coriolanus; but he demanded the restitution to the Volsci of all the lands formerly conquered from them, and the acceptance of this condition within 30 days. Before the expiration of this term the Romans, reduced to extremity, sent one embassy after another to the haughty exile. He refused to listen to the senators or to the priests, but could not resist the reproaches of his mother Veturia, and the tears of his wife Volumnia, who led an embassy of matrons. "Thou hast saved Rome," said he to his mother, "but lost thy son." He then returned with his army into the land of the Volsci, who, according to some historians, punished his defection with death; according to others, he was suffered to live quietly among them. The matrons of Rome, they say, mourned his death for a whole year, in a temple erected to Fortuna Muliebris, to commemorate their merits. The history of Coriolanus contains so many improbabilities that its authenticity has been seriously questioned by modern critics.

CORIOLI, an ancient town of Latium, in the land of the Volsci, from whom it was taken by the Romans in the early part of the 5th century B. C. It was for his valor and good conduct on this occasion that the Roman Caius Marcius received his surname of Coriolanus. When Coriolanus joined the Volsci against his countrymen, this city was retaken by the former. Under the Romans it soon fell into decay, and its exact site is now unknown.

CORK (Lat. *cortex*, bark), the soft elastic bark of a species of oak (*quercus suber*) which grows abundantly in Spain, Portugal, and Italy. When the tree is 15 years old the barking is commenced, and may be repeated every 8 or 10 years afterward, the crops improving both in quality and quantity at each operation. Trees thus barked will, it is said, live 150 years. The cork is removed from the trees in July and August. This is done by making incisions around the tree and longitudinally to the root, when the pieces are easily detached. These are then soaked in water, pressed under heavy weights, dried before a fire, and stacked or packed in bales for exportation. The cork-cutters divide the sheets of cork into narrow strips, and after cutting these of the proper length, round them into a cylindrical form, with a very sharp, thin-bladed knife. The French excel in this art. Spanish black is made from the burnt parings of cork. Cork and its uses were known among the ancients, but it does not appear to have been common until the 15th century, when glass bottles first came into general use. Cork is employed in various ways, but especially for stopping vessels containing liquids, and, on account of its buoyancy in water, in the construction of life-boats. Before the invention of the air belt it was used in the manufacture of life-preservers or cork jackets. These consisted of two strips of strong canvas made to fit the body, which enclosed pieces of cork. This invention appears to be of very early date, as Plutarch in his life of Camillus refers to it.

CORK, a maritime co. of Ireland, province of Munster, bounded S. by St. George's channel; greatest length from E. to W. 110 m.; greatest breadth, 70 m.; area, 2,885 sq. m.; pop. in 1841, 773,398; in 1851, 563,158. The W. part of the county is hilly; the N. and E. are remarkably fertile, and a larger extent of land is arable than in any other county of Ireland. It is watered by the Lee, Blackwater, Bandon, and smaller streams, none of which are here navigable to any great distance. The coast is broken by fine bays and inlets, and there are several islands off it belonging to this county. Iron, copper, and coal mines, manganese, fullers' earth, brick clay, and limestone exist here. The iron mines are no longer worked, but those of copper are the richest in Ireland. Agriculture, except near the sea-coast and in the neighborhood of the great lines of communication, is carried on with little skill. The staples are potatoes, oats, wheat, and dairy produce. Fisheries are extensively prosecuted. The chief trade is in provisions, and almost the only manufactures are whiskey and porter. The county is divided for judicial purposes into the East and West ridings, and returns 2 members to parliament, beside 2 for Cork city, and one for each of the boroughs of Bandon, Kinsale, Mallow, and Youghal.—Cork, a city and river port of Ireland, capital of the above county and a county in itself, situated at the head of the estuary of the Lee, 138 m. S. W. from Dublin; pop. in 1841, 80,720; in 1851, 85,755. It is the 3d city of Ireland in importance and population, Dublin and Belfast alone ranking before it. On the land side it is encompassed by hills of no great height, and by suburbs, the squalid poverty of which contrasts painfully with its own cheerful, spacious, and well kept main streets. It is lighted with gas and well supplied with water. The central part occupies half of an island in the river, connected with the mainland by bridges, the whole number of which within the city limits is 9. The principal streets are on the S. side of the Lee, and both channels are lined with quays almost throughout the extent of the city. The most prominent public buildings are the court house, gaols, house of correction, female penitentiary, convict depot, lunatic asylums, 2 infirmaries, bank of Ireland, savings bank, chamber of commerce, county club-house, custom house, and churches. Of the latter there are 7, including the cathedral, beside which the Roman Catholics have 3 chapels, the established church has 2 chapels of ease, and the dissenting sects have 10 places of worship. There are 4 monasteries and 2 nunneries, with a chapel attached to each. Near the city is a cemetery after the plan of Père la Chaise, and to the W. of this is a fine promenade 1 m. long, called the Mardyke. A tract of 240 acres has been reclaimed from the river and laid out as a park. The most important literary and scientific institutions are: Queen's college, opened in 1849, the royal Cork institution, incorporated in 1807 with a view mainly to the advancement of agriculture, the Cork library society, the mechanics' institute, agricultural, horticultural, and Cuvierian societies, and numerous schools. The charitable foundations include a house of industry for 1,200 paupers, a fever hospital, a Magdalen and 2 lying-in asylums, a foundling hospital, &c. There are 2 theatres, and barracks for infantry and cavalry. One daily, 2 tri-weekly, and 2 weekly newspapers are published in the city. The manufactures embrace glass, iron, gloves, leather, woollen cloths, flour, malt and distilled liquors, but are not important. A flourishing trade, however, is carried on, the imports consisting chiefly of timber, and the exports of grain, live stock, provisions, and linen. The foreign and colonial commerce is chiefly with the Baltic, the Mediterranean, Portugal, and Canada. The registered shipping of the port in 1856 amounted to 386 vessels, tonnage 50,744; entries during the year, 2,749, tonnage 334,910; clearances, 1,967, tonnage 249,018. Three railways radiate from Cork, viz.: the great southern and western, the Cork and Bandon, and the Cork, Blackrock, and Passage. The city is governed by a mayor, 16 aldermen, and 28 councillors. Its walls were built by the Danes in the 9th century, and its name, derived from the Irish *corroch* or *corcagh*, a swamp, was given to it in allusion to the original character of its site. The harbor, to which it owes all its importance, is famous for capacity and safety, and is divided into upper and lower. The latter, 11 m. below the city, 3 m. long, 2 m. broad, and completely landlocked, is entered by a channel 2 m. long and 1 m. wide, defended by 2 forts. In it are several islands, on one of which is Queenstown, formerly called Cove, and on others are powder magazines, artillery barracks, ordnance depots, &c. The inner harbor extends 5 m. below the city, and is being continually improved.

CORMENIN, Louis Marie de la Haie, vicomte de, a French politician, born in Paris, Jan. 6, 1788. Admitted to the bar in 1808, he was 2 years later appointed by the emperor auditor in the council of state. On the restoration he joined the royalists, was promoted to the office of master of requests, was faithful to the Bourbons during the Hundred Days, and resumed his situation on their 2d return. He now published several legal treatises, the most important of which has passed through several editions under the title of *Droit administratif*, and in return he received the title of baron, and afterward of viscount. In 1826 he joined the liberal party, was elected to the chamber of deputies, acted with the opposition, opposed the election of Louis Philippe in 1830, and after Aug. 7 refused a seat in the new council of state, and resigned his place in the chamber of deputies. He was reëlected, however, from the department of Ain, and wrote a great number of scorching pamphlets which proved injurious to the new dynasty. After 1834, under the *nom de plume* of "Timon," he wrote in a periodical several brilliant sketches of political characters, which were republished in a volume called the *Livre des orateurs*, and translated into English (New York, 1847). In 1845 and 1846 he wrote 2 pamphlets on the ultramontane controversy, which impaired his popularity. After the revolution of 1848 he was chosen to the constituent assembly by 4 electoral districts, was made chairman of the committee on the constitution, and had a large share in framing the republican constitution of 1848. On the *coup d'état* of Dec. 2, he was very loud in his denunciation of its author, but afterward accepted a seat in the new council of state, and has since most faithfully served the emperor.

CORMONTAIGNE, Louis de, a French military engineer, born about 1696, died Oct. 20, 1752. He entered the corps of engineers in 1715; in 1734 he directed the siege of Trarbach. Soon after this, he was appointed to superintend the operations at the siege of Philippsburg. In 1744 he conducted the sieges of Menin, Ypres, La Knoque, and Furnes, in Flanders, and that of Freiburg in Germany. He was afterward employed in surveying the fortifications of the kingdom, and in superintending the erection of new works at Strasbourg, Metz, Bitche, and Thionville. He is the author of various improvements on Vauban's system of fortification, which are sometimes entitled Cormontaigne's system.

CORMORANT (Fr. *cormoran*), a web-footed bird of the order *anseres*, family *pelecanidæ*, and genus *graculus* (Linn.); other synonymes are *phalacrocorax* of Brisson, and *carbo* of Lacépède; the English and French name is supposed to be a corruption of the Latin *corvus marinus* (sea raven), given on account of the black color. The bill is moderate, slender, straight, with the culmen concave, and suddenly hooked at the tip; the sides compressed and grooved; wings moderate and pointed; tail rather short and rounded at the end; toes long, the outer rather longer than the middle, and all 4 united by a full web; the base of the lower mandible with a coriaceous pouch capable of extension. There are about 30 species described, inhabiting every part of the world; they live in large flocks on the sea-coast and small islands, sometimes visiting inland lakes and rivers. They feed exclusively on fish, which they catch dexterously and devour voraciously, without discrimination as to species; hence this bird has become the emblem of the human glutton. They are excellent divers, flying and swimming under water, and remaining submerged for a long time. The nest is made of sea-weed, grasses, and coarse materials, heaped to a considerable height, and placed on inaccessible rocks or ledges and trees; the eggs are from 3 to 5, long and narrow, of a light green-conquest the exportation was prohibited; by a law of 1436, it was allowed whenever the price of wheat should not exceed 6*s.* 8*d.* per quarter, and of barley 3*s.* 4*d.* In 1463 the importation was prohibited unless the domestic price should exceed the rates named in the law of 1436. In 1562 exportation was allowed when wheat was worth 10*s.* per quarter, and barley 6*s.* 8*d.* In 1570 the exportation was allowed from some districts at the discretion of the local authorities, wheat paying an export duty of 1*s.* and other grain of 8*d.* In 1593 the exportation was allowed whenever the price of wheat did not exceed 20*s.* per quarter, and barley 12*s.*, wheat paying 2*s.* and barley 1*s.* 4*d.* duty. In 1660, on the accession of Charles II., along with heavy import duties, the export duty of wheat was fixed at 20*s.* per quarter with proportionate rates on other grains; in 1663, for these duties an *ad valorem* duty of 9 per cent. was substituted; as the exportation price of wheat was fixed at 48*s.* the duty was thus made 5*s.* 4*d.* per quarter. In 1670 prohibitory duties were laid upon importation, while exportation was prohibited until the home price should reach 53*s.* 4*d.* per quarter, when exportation was allowed on paying 9 per cent. duty, while importation was allowed with 8*s.* duty. In 1689 a bounty of 5*s.* per quarter was paid on wheat exported, when the price did not exceed 48*s.*, and of 2*s.* 6*d.* on barley or malt, if the price did not exceed 24*s.*; and at the same time, importation was prohibited. This system continued till 1773, when, prices having become very high, a law was enacted under the auspices of Mr. Burke, by which the introduction of foreign wheat was allowed, at a duty of 6*d.* per quarter, whenever the price reached 48*s.*, while the export bounty was to cease whenever the price fell as low as 44*s.* The next change was in 1791, by which an import duty of 6*d.* was to be levied when the price was 54*s.*; when it was under 54*s.* and above 50*s.* the duty was to be 2*s.* 6*d.*; and when it was under 50*s.* the duty was to be 24*s.* 3*d.* per quarter. In 1804 a duty of 24*s.* 3*d.* was levied when the home price was 63*s.* or less; when it was from 63*s.* to 66*s.* the duty was fixed at 2*s.* 6*d.*; and when it was 66*s.* or more, the duty was 6*d.* The official price was established by the average of 12 districts, into which the maritime counties of England had been divided; and in Scotland by the average of 4 maritime districts. These averages were taken 4 times a year. In 1814 the export bounty was abolished, and in 1815 an act was passed fixing 80*s.* as the limit at which there should be no duty on importation. In 1825 a minimum duty of 1*s.* was levied when the price should be above 85*s.*, with a maximum duty of 17*s.* when the price was between 70*s.* and 80*s.* In 1825 the duty on wheat from the North American colonies was fixed for one year at 5*s.* without regard to price. In 1827 Mr. Canning attempted a reform of the corn tariff, but failed. In 1828 an act was passed fixing a minimum duty of 1*s.* when the price was 73*s.* or more, with a maximum duty of 23*s.* 8*d.* when the price was 64*s.*; the prices to be ascertained from actual sales in the principal towns. In 1839 the anti-corn-law league was founded, and the agitation for the total repeal of the duties commenced. In 1842 Sir Robert Peel's sliding scale was enacted, fixing a minimum duty of 1*s.* when the price was 73*s.* and over, and adding 1*s.* to the duty with each decrease of 1*s.* in the price, until the maximum duty of 20*s.* was reached whenever the price fell below 51*s.* In 1843 the duty on wheat from Canada was fixed at 1*s.* Finally, in 1846, Sir Robert Peel's famous free trade measure was passed, seriously reducing the corn duties at once, and fixing them, after Feb. 1, 1849, at the nominal rate of 1*s.* per quarter on wheat and other corn, and 4½*d.* per cwt. on all kinds of flour and meal.

CORN SNAKE, the common name of the *coluber guttatus*, Linn. (genus *scotophis*, Bd. and Gd.). The head is narrow and elongated, and the snout obtuse; the neck is contracted, the body very long, and the tail small and tapering. The color above is reddish brown, with oblong spots of brick-dust color bordered with very dark brown; the sides are lighter with small spots; below, the color is silver-white, with black squares of various sizes irregularly disposed; below the vent is a longitudinal line on each side, formed by a black spot on each scale. In a specimen 4 feet long, the head was 1½ inches long, body 39, and tail nearly 8 inches, the greatest circumference being 4 inches; it attains a length of 6 feet. It conceals itself by day, and is generally seen early in the morning and about dusk; it enters houses, and is believed to devour chickens, as well as the small animals usually eaten by snakes. Its northern limit appears to be North Carolina. The abdominal plates are 126, the subcaudal scales 64.

CORNARO, a Venetian family, which furnished several doges in the 14th, 17th and 18th centuries, and among whose distinguished members are: I. LUSIGNANA CATTARINA, queen of Cyprus, born in Venice in 1454, died there, July 5, 1510. In 1473 she succeeded her husband, James II., as regent, and reigned until Feb. 26, 1489, when, worried by incessant jealousies, she abdicated in favor of the republic. On her return to her native city, she was received with great distinction by the doge, and the castle of Asola, in the province of Treviso, was assigned to her as a residence. Bembo, one of her relatives, who afterward became eminent as cardinal, celebrated in his dialogues, entitled *Gli Asolani*, her brilliant intellectual and social qualities. Her portrait was painted by Titian, and her life has afforded a rich field of romance to French novelists. II. LUIGI, an Italian apostle of temperance, born in Venice in 1467, died in Padua about 1566. After having injured his health by excesses, he led, from his 40th year to the time of his death, a life of almost total abstinence, restricting himself, by the advice of his physicians, to a daily allowance of 12 ounces of solid food, and 14 ounces of wine. This cured him, not only physically, founding the French academy, composed also plans of comedies, the execution of which was performed under his direction by several salaried authors. Corneille was admitted into the coterie of the cardinal's official poets, but either by his success incurred the jealousy of his master, or offended him by venturing to improve one of the plans submitted. At the age of 30 years, having meditated on the resources of the dramatic art, studied the ancients, and derived experience from his own productions, Corneille returned to Rouen. There, by the advice and aid of M. de Chalon, a former secretary of Maria de' Medici, he learned the Spanish language; and the fruit of his studies was the tragedy of the *Cid*, founded on a play of Guilhem de Castro, and the first French dramatic masterpiece. It was distinguished by a simplicity in the subject and treatment, by a sustained development of situations, characters, and sentiments, and by a purity and elevation of style, of which France had furnished no previous example. Though received with enthusiasm by the public, it brought upon the author a violent literary persecution, since Cardinal Richelieu and the courtiers dependent on him undertook to show that with the *Cid* began the decline of the French theatre. The academy, protected by the cardinal, was urged by him to pronounce its judgment, and after discussions during 5 months published in 1638 the *Sentiments de l'académie sur le Cid*, by which that drama was admitted to be a masterpiece, though most of its peculiar beauties were censured as faults. Its popularity spread through Europe, and Corneille preserved in his library translations of it into nearly all the European languages. "As beautiful as the Cid" became a proverb in France. The subject of his next piece was taken from Roman history, and this choice decided the character of French tragedy during the next century. Modern and mediæval ideas and history were from this time deemed unsuited to dramatic purposes; the forms of the classical tragedy were copied; and the stage, instead of illustrating Christian ideas and contemporary life, was occupied chiefly by Greeks, Romans, Assyrians, Persians, Egyptians, and even Turks. The tragedy of *Horace* (since called also *Les Horaces*) appeared in 1639, and surpassed its predecessor in originality, being upon a subject which had hardly before been treated in poetry, and also in the force and grandeur which characterized alike the situations, personages, and dialogue. It was followed in the same year by *Cinna*, esteemed by Voltaire the most finished of the author's pieces, and in 1640 by *Polyeucte*, which is usually esteemed by French critics the *chef d'œuvre* of Corneille, if not of the dramatic art. *Polyeucte* was read at the hôtel de Rambouillet, and condemned by that sovereign tribunal on questions of wit and taste; and Corneille in alarm had decided to withdraw it from rehearsal, when an obscure comedian reassured him as to its excellence. In 1641 and 1642 he produced *Pompée* and *Le menteur*, the former of which was unequal to his previous tragedies, but the latter, founded on a Spanish piece of Alarcon, renewed the glory which he had obtained by the *Cid*, and was the first French comedy which gave a lively and natural picture of the manners of the time. In 1648 followed *La suite du menteur*, which was not more felicitous than the second parts of poems usually are. The decline of his genius appeared in the complicated and fantastic subjects, excessive desire for theatrical effect, chimerical ideals, and subtleties of disquisition, which began to mark his pieces. Poetry was displaced for an exhibition of the Macchiavellism of motives. The author thought himself unsurpassed in knowledge of men and courts, the world and politics, and with a character sensitively honorable and truthful he undertook to illustrate the "doctrine of the murderous Macchiavelli." *Rodogune*, *Théodore*, *Héraclius*, *Don Sanche d'Aragon*, *Nicomède*, *Andromède*, and *Pertharite*, between 1646 and 1653, were of unequal though all of inferior merit, and the decided failure of the last caused him to renounce dramatic composition for 6 years. In the interval he translated the "Imitation of Christ" into French verse. In 1659 he was induced to return to the theatre, only to disfigure in his *Œdipe* one of the most admirable themes of ancient tragedy. The applause with which this piece and his *Toison d'or* (1661) were received induced him to write constantly for 15 years, but no one of his later dramas has kept its place on the stage. *Sertorius* (1662) has some interesting and pleasing scenes; *Sophonisbe*, *Othon*, *Agésilas*, and *Attila* (1663-'67) show the almost powerless efforts of a failing imagination; *Tite et Bérénice* (1670) was an unequal duel with Racine, then in the early vigor of his talent; the ballet tragedy of *Psyché* (1671) was composed in conjunction with Quinault and Molière; and *Pulchérie* (1672) and *Surena* (1674) were his last and also his feeblest attempts. He wrote also in prose important *Examens* of each of his plays, and 3 discourses on the drama, on tragedy, and on the 3 unities. The reputation of Corneille rests chiefly upon the *Cid*, and the 4 or 5 pieces which immediately succeeded it, which are distinguished by the justice and vigor with which they exhibit great passions or great characters. It was by no means, says Schlegel, so much his object to excite our terror and compassion, as our admiration for the characters and astonishment at the situations of his heroes. Not content with exacting our admiration for the heroism of virtue, he claims it also for the heroism of vice, by the boldness, strength of soul, presence of mind, and elevation above all human weakness, with which he endows his criminals of both sexes. He has delineated the conflict of passions and motives; but for the most part not immediately as such, but as already transformed into a contest of principles. It is in love that he has been found coldest; seldom does he paint it as a power which imperceptibly steals upon us, and gains an involuntary and irresisti-

Lesbos, which she left, regretted by the people, after the battle of Pharsalia. Accompanying Pompey in his flight to Egypt, Cornelia was an eye-witness of her husband's murder, after which she fled to Cyprus and thence to Cyrene, and soon disappeared from history.

CORNELIS, Cornelius, a Dutch artist, born in Haarlem in 1562, died in 1638. He received his first instruction from Peter Aersten the younger, called Long Peter, and at the age of 17 departed for Italy. He was compelled by the plague to return to Haarlem, where he rose to considerable distinction as a painter of history and portraits. His most celebrated works are the "Company of Archers of Haarlem," containing portraits of the principal members, and the "Deluge," painted for the earl of Leicester. Many of his works are in the galleries of Dresden and Vienna.

CORNELIUS, Elias, D.D., secretary of the American education society, born in 1795, died Feb. 12, 1832. He was graduated at Yale college in 1813, and after studying theology became in 1816 agent of the American board of commissioners for foreign missions, and visited the Cherokee and Chickasaw Indians. In 1818 he preached in New Orleans, and in 1819 he was installed colleague of Dr. Worcester at Salem, which position he exchanged in 1826 for that of secretary of the American education society. In this office he instituted the plan of permanent scholarships. His memoirs, written by B. B. Edwards, were published in 1833.

CORNELIUS NEPOS. See Nepos.

CORNELIUS, Peter von, a German painter, born in Düsseldorf, Sept. 27, 1787. His father was inspector of the Düsseldorf gallery, since removed to Munich, and many of the artist's play hours in boyhood were passed in the halls that contained the great masterpieces of Rubens. At an early age he began to make drawings from Marc Antonio's engravings, and showed a great predilection for the study of the antique and of Raphael, whose works he often endeavored to copy from memory. His father dying in somewhat straitened circumstances when Cornelius was 16 years of age, his mother was advised to apprentice him to a goldsmith. She refused, however, to take him from the Düsseldorf academy, where he was pursuing his studies, declaring that she would willingly undergo additional privations to enable her son to become a painter. He was soon able to contribute to the family support by illustrating almanacs and painting banners, and at the age of 19 received a commission to paint the cupola of the old church at Neuss with colossal figures in chiaroscuro. As a first attempt in the highest department of painting by a youth of 19, it is a striking, though necessarily a crude performance. The artist meanwhile began to manifest a taste for imposing effects, and an impatience of academic rules. He looked to Rome as the theatre of his studies, and already meditated a regeneration of German art. While at Frankfort-on-the-Main, in 1810, he commenced a series of illustrations to "Faust," which he dedicated to Goethe, and which are still considered among his most successful and original works. The following year he established himself at Rome, where, with the coöperation of Overbeck, Koch, Schnorr, Schadow, and others, he laid the foundation of that new German school which was to replace the pedantry and conventional rules of the academies, by a study of the antique and a return to the style and spirit of the old masters. The artistic brotherhood occupied a part of the old convent of St. Isidore, where they pursued their art with an intentness and exclusiveness which fixed upon them the attention of contemporary painters in Rome, and secured the sympathy of such men as Goethe, Schlegel, and Niebuhr. The revival of fresco painting was conceived to be the fittest means of carrying into effect their ideas, and the Prussian consul-general, M. Bartholdy, initiated the movement by employing the leading artists of the new school to paint the walls of his villa. Cornelius executed for him 2 frescoes, "Joseph Interpreting the Dream of Pharaoh's Chief Butler," and "Joseph Recognizing his Brethren," with so much success that he was commissioned by the marquis Massimi to decorate his villa with frescoes from the *Divina Commedia* of Dante. He advanced no further than the designs of these, which were afterward engraved by Schoefer, having received an invitation from the crown prince of Bavaria to aid in the decoration of the Glyptothek in Munich. Another of his most celebrated works executed at Rome was a series of designs illustrating the *Nibelungenlied*, the thoroughly national spirit of which has made them very popular in Germany. Cornelius left Rome in 1819, and having reorganized the Düsseldorf academy, of which he had been appointed director, commenced his labors on the Glyptothek, in which he was steadily employed, with the assistance of a band of pupils, for the next 10 years. Two immense halls were appropriated to him, one of which, the hall of heroes, he illustrated with the history of the demigods and heroes who contended in the Trojan war, and the other with a view of the whole Grecian mythology. In both, the figures are of colossal proportions, and in grandeur of general conception, in simplicity of arrangement, and evidences of profound learning, the work is one of the most remarkable of modern times. During this period the general decoration of the corridors of the Pinakothek was planned by Cornelius, although the designs for particular parts and the direction of the whole were confided to Zimmermann and other artists, whom Cornelius, who had now become director of the Munich academy, had thoroughly imbued with his principles. Amid these employments the artist found time also to execute the frescoes in the Ludwigs-Kirche, one of which, the "Last Judgment," 64 feet by 30, is the largest picture in the world, exceeding even that on the same subject by Michel Angelo in the Sistine chapel, with which in other sessor wished. According to Ovid, Amalthæa was the name of the daughter, who presented the horn to Jupiter filled with fresh herbs and fruit. The cornucopia appears on the most ancient Greek drinking vessels, and on many ancient coins, and the volutes of Ionic columns were often sculptured to represent it. In modern times, it is represented in the fine arts as a horn from which issue leaves, flowers, and fruits.

CORNWALL, a post village and township of Litchfield co., Conn., about 37 m. N. W. from Hartford; pop. of the township in 1850, 2,041. The village is situated about 2 m. E. from the Housatonic railroad, which follows the course of the river of that name through the township. A foreign mission school was established here in 1818 for the purpose of qualifying converts from paganism to preach the gospel to their countrymen, and in 1820 it contained 29 pupils, of whom 19 were American Indians and 10 natives of Pacific islands.

CORNWALL, a co. of England, forming the S. W. extremity of the island of Great Britain, bounded E. by Devonshire, and on all other sides by the ocean; area, exclusive of the Scilly isles, which belong to it, 1,330 sq. m.; pop. in 1851, 355,558. Its form is that of an irregular triangle; its S. coast is marked by deep indentations and bold headlands, its N. W. by shallow bays and a nearer approach to regularity of outline, while at the angle made by these 2 coasts is the steep granitic promontory, 60 feet high, called the Land's End. Branches of the Devonian hills, abounding in whitish gray granite, the decomposition of which has formed fine beds of kaolin or porcelain earth, stretch across the county from N. E. to S. W. There are no large rivers, but most of the streams have valuable harbors at their mouths, and many have been made important inland channels by connection with canals. The soil is poor, but produces large crops of potatoes, and a kind of barley called *pillez* for fattening pigs and poultry. The chief employment of the inhabitants is mining for tin and copper, and perhaps in no other part of the world has the art been prosecuted with more skill. The mining district lies chiefly in the S. W. of the county, and the excavations in some places extend for a long distance under the bed of the ocean. No limit has been found to the yield of ore except in the power to extract it. The average annual produce of tin is about 4,000 tons, and of copper 12,000 tons. The former has declined in value owing to large importations from Banca. Gold, silver, lead, zinc, iron, manganese, arsenic, antimony, bismuth, and cobalt are found in comparatively small quantities. The Cornish mines employ 71,000 hands and a capital of $12,500,000. The manufactures are confined to carpets and a few coarse woollens, and the exports consist of minerals and fish. Cornwall forms a royal duchy, settled on the elder son of the sovereign. It returns 4 county members to parliament.

CORNWALLIS, Charles, 1st marquis and 2d earl of, a British general, born Dec. 31, 1738, died at Ghazepore, in British India, Oct. 5, 1805. He was educated at Eton and Cambridge, served in the 7 years' war under Lord Granby, and succeeded to the peerage in 1762. An aide-de-camp and favorite of the king, he was made governor of the tower in 1770, but he nevertheless opposed the measures which led to the American war. When, however, his regiment was ordered to the scene of war in 1776, he declined a proffered leave of absence, and embarking with them, served with activity, at first as major-general under Howe and Clinton, in the Jersey campaigns, afterward in the expedition to the Chesapeake, and commanded the detachment which took possession of Philadelphia, Sept. 24, 1777. He was actively engaged in the siege of Charleston in 1780, and after its capture was left with about 4,000 troops in command of the province of South Carolina. Here he gained a victory over Gen. Gates at Camden, Aug. 16, 1780, and a second less decided over Gen. Greene at Guilford, March 15, 1781. But, unable to hold the country, he entered Virginia in the course of the spring, where he kept no fixed position; although superior in the field to any opposing force, he could obtain no decided advantage, while causing much damage to private property. At length, unable to extricate himself by sea, owing to the superiority of the French fleet, he shut himself up at Yorktown behind strong intrenchments. Here he was surrounded and besieged by the American and French armies and the French fleet, and obliged to surrender with his whole force, Oct. 19, 1781. This was virtually the end of the British attempt to conquer America, and soon led to that change of the ministry which brought about the peace in 1782, and the recognition of American independence. For some time Lord Cornwallis lived retired from public view, but in 1786 he was appointed governor-general and commander-in-chief of Bengal. Soon after his arrival the English power became engaged in a conflict with Tippoo Sahib, in which its existence was at stake. He took the field in person in 1790. The movements by which he penetrated Tippoo's dominions, and the battles in which he overthrew his forces, are looked upon as among the most important in that series of victories by which the British authority in India was finally established. The war was brought to a close in two campaigns, and the power of the sultans of Mysore so broken by defeat, and a treaty by which, in order to save the capital city of Seringapatam, one-half of their dominions was surrendered to the British, as to leave no great difficulties in the way of its subsequent annihilation. In 1793 Lord Cornwallis returned to England, and in 1798 was made lord lieutenant of Ireland, then in a very distracted state. He restored tranquillity, and repressing the excesses of the Orange party, acquired the good will of the Irish. He signed the peace of Amiens in 1802, and having mantles of it, and cotton yarn was found in their houses. He also found among this people "a great store of maize," Guinea cocks (some domestic fowl), peas, dressed skins of various kinds, &c., &c. From Cibola, Coronado travelled eastward, visiting several towns occupied by a similar people to those he had met, which are recognized in the existing villages of the present Pueblo Indians. He proceeded eastward to what he calls the "big river," which is the Rio Grande, where he heard of the great city of Quivira, where lived "a king with a long beard, hoary-headed and rich." In their journey eastward they "met with a new kind of oxen, wild and fierce, whereof, the first day, they killed fourscore, which sufficed the army with flesh." They continued to Quivira, almost 300 leagues distant, by their account, traversing "mighty plains and sandy heaths, smooth and wearisome, and bare of wood." "All that way the plains are as full of crooked-back oxen as the mountain Serena in Spain is of sheep." This narrative is interesting as it furnishes the first authentic account of the buffalo, the great prairies and the desert plains of New Mexico. It describes, too, with every appearance of truth, the towns of the Pueblo or semi-civilized tribes of Indians, as they existed more than 300 years ago, and which are still found in New Mexico. These are the towns and the people which, since their rediscovery in the last 10 years, have awakened so much interest throughout the world. The expedition reached the city of Quivira, the ruins of which are well known, being near lat. 34° N., in a direction N. E. of El Paso, about 170 m. distant. There he found a temperate climate, with very good waters, and an abundance of fruit. There was no cotton seen or garments of it used, the people clothing themselves in skins. On his way back in March, 1542, Coronado fell from his horse at Tiguex, near the Rio Grande, "and," continues the narrative, "with the fall fell out his wits and he became mad." The viceroy De Mendoza was much annoyed at the return of the expedition, which was fitted out at great expense. He wished a colony to be founded in the distant regions visited, but the commander of the expedition did not deem it proper to leave any of his party in so poor a country, and at so great a distance from succor.

CORONATION, the act of crowning or consecrating a sovereign. This ceremony is of great antiquity, allusion to it being made in Scripture in the history of the Hebrew kings. In England the Saxon sovereigns were crowned at Kingston-upon-Thames, Bath, or Winchester; Harold and William the Conqueror were crowned at Westminster; and the English sovereigns at the present time are crowned in Westminster abbey, with great splendor and with the observance of old feudal customs. In France, the cathedral of Rheims has from ancient times been the place of the coronation of the French monarchs. By the regulations of Charles V., made in 1365, the king must be crowned on Sunday by the archbishop of Rheims, in presence of the princes of the blood, peers, and high dignitaries of the kingdom. Louis XVIII. and Louis Philippe were the only kings since the 8th century that did not receive this religious consecration. Napoleon crowned himself, and then placed the crown on the head of Josephine.

CORONER, an officer so called from *coronator*, because originally his functions were for the most part as conservator of the peace, and in other respects as ministerial deputy of the crown. The office is of very great antiquity in England, and at an early period was held by men of high dignity. The chief justice of the king's bench was called by Coke the chief coroner of the kingdom, and as such he could perform the duties of the office if he chose in any part of the realm. It was the custom from a remote period to elect several coroners in every county, which was done by the freeholders at the county court. By a statute in the reign of Edward I. it was enacted that none but lawful and discreet knights should be chosen; but, according to Blackstone, "through the culpable neglect of gentlemen of property the office had fallen into disrepute, and got into low and indigent hands." More recently, however, the office has been generally held by men of respectability. The duties of coroner are ministerial and judicial; ministerial, as to serve writs when the sheriff is incompetent to act, or when the process is against the sheriff himself; he may also by virtue of his office apprehend a felon within his county without warrant; judicial, as to inquire, when any person is slain or dies suddenly or in prison, concerning the manner of his death. This must be *super visum corporis* (within sight of the body), and by a jury summoned for that purpose over whom the coroner presides. If upon the inquest any one is found guilty of homicide, he is to be committed to prison by the coroner, and the inquisition with the evidence is to be returned to the king's bench. Another part of his duties is to inquire concerning shipwrecks, and who is in possession of any of the property which may have been saved. In this country the office subsists in all or most of the states, and the duties are generally the same as in England. In the Revised Statutes of the state of New York, by which coroners' inquests are regulated, the case of death in prison is omitted.

CORONET (Lat. *corona*, a crown), a crown worn by princes and noblemen. It was not known in England prior to the reign of Henry III., and the oldest remaining representation of one is on the monument of John of Eltham, 2d son of Edward III., who died in 1334. All the coronets at present worn by the British nobility surround caps of crimson velvet edged with ermine. That of the prince of Wales was anciently a circle of gold, with 4 crosses pattée on the edge between as many fleurs de lis; but since the restoration it has been closed with one arch, adorned with pearls, and surmounted by a mound and cross. That of a duke is enriched with precious stones and pearls, and adorned with 8 large strawberry leaves. That of a marquis is set round with 4 strawberry leaves interposed between as many pearls. That of an earl has 8 pearls alternate with as many strawberry leaves, but set on pyramidal points much above them. That of a viscount is surrounded only by an indefinite number of pearls. The baron's coronet, which was first granted by Charles II., has 6 pearls set around it at equal distances. In England coronets are worn at the time of a coronation by peers and peeresses. On the continent of Europe coronets are not worn, but are merely represented with other heraldic insignia.

CORONINI-CRONBERG, Johann Baptist Alexander, count, an Austrian general, of an old and distinguished family, born at Göritz, Nov. 16, 1794, was preceptor of the present emperor of Austria, commander-in-chief of the Austrian forces in the Danubian principalities in 1854, and from 1850 to the present time (1859) governor of the Banat and Voivodina.

CORPORAL (It. *caporale*, from Lat. *caput*, a head), the lowest officer in a company of infantry, between a private and a sergeant. He does duty in the ranks as a private, but has charge of a squad at drill, and places and relieves the sentinels.

CORPORALE, in the Roman Catholic and Greek churches, the fine linen cloth extended upon the altar, on which the priest deposits the elements in the sacrament of the eucharist. It is regarded as representing the shroud in which the body of Christ was enveloped after his death. From its sacredness it was sometimes touched by a person taking an oath, to give greater solemnity to the act; whence the name of corporal oaths.

CORPORATION. A corporation is a civil institution, or, as it is sometimes termed, a body politic, the essential character of which is that it has a legal existence as a person, under the name given to it by legislative authority, either by express charter or by prescription, which implies a charter. The original idea of corporations is usually attributed to the Romans, but this is not strictly accurate. The traditional division of the citizens of Rome into separate societies according to their trades, which Plutarch relates as having been made by Numa, like most of what has been reported of that early period, is probably fabulous; yet even if authentic, it was a mere classification of the people without any of the essential incidents of a corporation. The greater division into patricians and plebeians (which grew up by a natural course rather than by any public enactment) had perhaps as much of the corporate character. The sacred orders (also supposed to have been instituted by Numa) of *pontifices*, *augures*, *feciales*, and others, might with more propriety be called corporations, yet these were all constituents of the municipal government, and were in no other sense corporate than was the senate. The *universitates* or *collegia* of the civil law were rather associations than corporations. (See College.) The true original of corporations is to be found in the middle ages, when cities, towns, fraternities of tradesmen, and the like, obtained charters from feudal sovereigns of certain privileges and immunities, sometimes for the protection of personal liberty, and sometimes for the advantage of trade, the latter being somewhat in the nature of a monopoly. The English law relating to corporations can be but summarily referred to. No particular number of persons is necessary for constituting a corporation. There are many corporations consisting of a single person. A corporate name and perpetuity are the essential constituents. The common divisions are: 1. Aggregate and sole corporations, the former being composed of several members, and kept up by a succession of new members when vacancies occur, as the municipal government of cities, usually composed of a mayor and commonalty: the latter (sole corporations) being constituted of a single person, as the king, a bishop, and the like, whose office still exists, notwithstanding the decease of the natural person holding, and all the civil rights inherent in the office pass to the successor. Another division is into ecclesiastical and lay, the latter being again divided into civil and eleemosynary. Eleemosynary corporations are constituted for the purpose of distributing alms and for other charities. Corporations are more numerous in the United States than in any other country. Beside the municipal corporations of cities, counties, towns, &c., charters are granted for every species of private business, as banking, insurance, manufacturing, &c., the peculiar incidents of which will be more fully considered under the appropriate heads.

CORPOSANT, or Corpo Santo, a name applied to the electric light sometimes seen on the ends of the masts and yards of vessels, more commonly called Castor and Pollux, or St. Elmo's fire.

CORPS (Fr. body), according to the U. S. articles of war, any portion of the army organized by law with a head and members, or any other military body having such an organization, as a regiment, an independent company, or a body of topographical engineers under one head. Detachments of regiments, united for a particular object, whether for a part or the whole of a campaign, are not properly corps, since, being temporarily united, neither the head nor members are commissioned in the particular body in which they act. Of special applications of the term, the principal are *corps d'armée*, the main body of an army, or a portion of an army commanded by a general, which varied under Napoleon from 10,000 to 80,000 men; *corps de bataille*, the central and strongest portion of an army in battle array; *corps de garde*, a body of men stationed at a post on watch; *corps volant* (flying corps), intended for rapid movements; and *corps de réserve*, the force in battle reserved in the rear to sustain the other lines, follow up a victory, or protect a retreat.

CORPULENCE. See Adipose.

CORPUS CHRISTI (Lat. the body of Christ), a festival of the Roman Catholic church, celebrated on the Thursday after the octave of Whitsunday. It is called by the French *Fête Dieu*, or the feast of God. It is derived from the article of Catholic faith which teaches that the humanity of the Saviour is really and substantially present in the host consecrated at mass, and preserved in the tabernacle upon the Catholic altar. The institution of the sacrament was always celebrated with solemn thanksgiving on Maundy Thursday in Holy Week. But that time being mostly taken up with the commemoration of the sorrows and sufferings of the passion, a solemn festival was established by the zeal of pious persons, to celebrate this mystery. It was first ordered to be celebrated in a synod held at Liége in 1246. Pope Urban, in 1264, commanded it to be observed by the whole church with a solemnity equal to the 4 great festivals of the year. The bull of the pope was confirmed by many of his successors, especially by Pope Clement V. in the general council of Vienne, in France, in the year 1311.

CORPUS CHRISTI, a post village and capital of Nueces co., Texas, on the neck of the peninsula which separates Corpus Christi and Nueces bays, 198 m. S. E. from Austin; pop. in 1850, 533. It enjoys an active trade, and has regular steamboat communication with New Orleans. The business part of the town is situated at the foot of a bluff from 80 to 100 feet high, the upper part of which is occupied by pleasant dwellings. It has a good harbor. At the commencement of the Mexican war, the U. S. army under Taylor was encamped here from Aug. 1845, to March, 1846.

CORPUS JURIS. See CIVIL LAW.

CORREA DE SERRA, JOSÉ FRANCISCO, a Portuguese scholar, born at Serpa in Alemtejo in 1750, died at the baths of Rainha in 1823. He was educated in Rome and Naples, was admitted to holy orders, and soon after his return to Portugal in 1777, was made perpetual secretary of the academy recently instituted at Lisbon. He collected cabinets of natural history, especially of botany, established a laboratory for scientific research, and prepared for the press numerous unpublished documents relating to the history of Portugal. Accused before the inquisition, he escaped to Paris in 1786, but was permitted to return to Portugal after the death of Pedro III. At Paris he had been intimately associated with the naturalist Broussonet, and he became the host of the latter when he fled in disguise from the reign of terror to Lisbon. Endangered by the detection of Broussonet, he took refuge first in Gibraltar and then in London. He lived in Paris in learned society and pursuits from the peace of Amiens till 1813, when he sailed to the United States, where he continued his scientific studies, and in 1816 became minister plenipotentiary of Portugal. He was recalled to Portugal on the promulgation of the constitution of 1820, and made minister of finance. His most important writings are treatises on the physiology of plants, and a collection of inedited memorials of Portuguese history, in 4 vols., 1790–1816.

CORRECTION OF THE PRESS, the indication of errors and defects in a printed sheet, with a view to their removal by the compositor. The first impression taken from the types is termed a proof, and is corrected first by the printer's reader, who points out the faults in the compositor's workmanship, and afterward by the author or editor, who indicates final alterations in language, orthography, and punctuation. The changes to be made are indicated by marks on the proof, known as printers' signs, which with very slight variations are universally recognized in printing houses. The most important of these are the following: Three parallel lines under a word show that it is to be printed in large capitals; two parallel lines, that it is to be in small capitals; and a single line, that it is to be in Italics. As the compositor's attention must be directed to any change in the text by some sign upon the margin, the words *caps*, *sm. caps*, and *Ital.*, are written on the margin opposite to the lines which correspond to them. If a word printed in Italics is to be changed to Roman letters, a line is drawn under it, and the abbreviation *Rom.* written in the margin. When a corrector, after having changed or struck out a word, decides to let it remain as it was, he makes dots under it, and writes *stet* in the margin. An omitted word or letter is marked for insertion by being written in the margin opposite to a caret (ʌ) in the text at the place where the omission occurs. An omission too long for the side margin may be written at the top or bottom of the page, or on a sheet of paper attached to the proof, and connected with the caret by a line. An omitted hyphen or dash is marked for insertion by being enclosed between 2 parallel lines in the margin. When a word or letter is designed to be struck out from the text, a line is drawn through it and the character ₰ (for the Lat. *dele*) is made in the margin. To change one word for another, draw a line through the printed word and write the intended word opposite in the margin. When two words are printed too closely together, a caret is made beneath the place where they should be separated, and the sign # written in the margin. Syllables improperly separated are joined by a horizontal parenthesis, as *er‿ror*, which is also to be made in the margin. An inverted letter is shown by a dash under it, and by the sign 9 in the margin. Omitted quotation marks are indicated by carets in the text, and by the characters ✓“ and ✓” in the margin. When the punctuation requires to be altered, a caret is made in the text, and the points are inserted in the margin; the period is enclosed in a circle, and the other points have a perpendicular stroke after them. When two letters or words are transposed, a curved line is drawn, running above the 1st and beneath the 2d, and the letters *tr.* are written in the margin. The sign ¶ in the margin, with a caret in the text, shows the place where a new paragraph is to be begun. If an unintended break into paragraphs has been made, let a line curve from the end of one paragraph to the beginning of the next, and *No* ¶ be written in the margin. Attention is called to defective letters by a dash under them, and a cross (X) opposite; and to crooked words or lines by strokes above and below them, and corresponding parallel strokes in the margin. Letters too large or too small are underscored and indicated by the letters *w.f.* (wrong font) in the margin. The attention of the author or editor is called to obscurities of language, words illegible in the "copy" (manuscript), doubtful statements, &c., by underscoring them and writing *qu?* or *qy?* or (?) in the margin.—Very rare qualifications are requisite to be an excellent corrector of the press, or proof-reader. Beside a familiar knowledge of the language in which the work is written, and of the technicalities of the typographical art, which is essential, and extensive and accurate information on general subjects, which is constantly useful, there is especially demanded an extreme precision in the habits of the eye. Hence the term "typographical eye," which implies the power of at once perceiving all the letters of which each word is composed, grasping the sense of each sentence, and following the succession of ideas through a paragraph or a chapter. In the period immediately following the discovery of printing, publishers were generally eminent scholars, and either corrected the proofs themselves or were assisted in the task by the most learned men of the time; and several of the early editions of the Scriptures and classics are celebrated for their freedom from typographical errors. Giovanni Andrea, bishop of Aleria, and secretary of the Vatican library, was corrector of the press for Sweynheim and Pannartz, the first printers at Rome, about 1468–'74, and exerted his influence in their behalf with Pope Sixtus IV. The learned Hellenist Camotius corrected the Aldine edition of Aristotle, in 5 vols., Vienna, 1495–'98. Musurus assisted the eldest Aldus in correcting his edition of Plato (1513), and in the preface Aldus offered a gold coin for every mistake that should be discovered (*mutare singula errata nummo aureo*). The proof-readers of Plantin, who published his first work at Antwerp in 1555, and whose editions were famous for their beauty and correctness, were the distinguished scholars Gheesdal, Pulman, Giselin, Kilian, and Raphelingus. The last declined the professorship of Greek at Cambridge, preferring to correct texts of the oriental languages, but afterward became at the same time head of a printing establishment at Leyden and professor of Hebrew in that city. Kilian, who corrected proofs for 50 years, wrote a pleasant poetical apology for the *corrector typographicus*, in which he reproached authors for the carelessness and deformity of their manuscripts. The Stephenses at Paris often corrected their own publications, but were assisted also by numerous erudite proof-readers. A poet of the time describes the interior of that learned establishment, in which the correctors and even the children and servants spoke in Latin:

> Nempe uxor, ancillæ, clientes, liberi,
> Non segnis examen domus,
> Quo Plautus ore, quo Terentius, solent
> Quotidiane colloqui.

Robert Stephens and Plantin both often exposed publicly the sheets of a work, offering a reward to whosoever would show a fault. Erasmus corrected many proofs for his publisher, Froben of Basel; and yet such unlucky mistakes stole into some of his own works, that he once declared that either the devil presided over typography, or there was diabolic malice on the part of compositors. In a paraphrase of Matt. xi. (1524), he spoke of Christ as *singulari more filium Dei*. But instead of *more* there appeared in the text *amore*, and the faculty of theology at Paris immediately declared the proposition a Nestorian heresy. Erasmus, however, was able to prove his orthodoxy by producing a copy of a previous edition, in which the passage was correctly printed. Other early and learned correctors of the press were Campanus, ex-bishop of Teramo, who served Ulrich Gallus, at Rome; Chalcondylas, the exiled Greek, who corrected the first edition of Homer, and the first large work in Greek, Florence, 1488; Egnatius, professor of belles-lettres at Venice, and proof-reader for Aldus; Œcolampadius, professor of theology, reformer, and proof-reader for Cratander at Basel; Friedrich Sylburg, who corrected the editions of the classics published by Wechel, and also those by Commelin; and Turnebus, royal printer of Greek books in France, instructor of Henry Stephens, and a friend of the most illustrious scholars of his time.

CORREGIDOR, a Spanish official, sometimes the president of the town council. Formerly he was the supreme executive officer where there was no governor. He is now an administrative officer in certain political relations, beside exercising the functions of a judge in civil and criminal matters.

CORREGGIO, Antonio Allegri da, one of the great Italian painters, born at Correggio, now called Reggio, a small town near Modena, in the latter part of 1493, or the beginning of 1494, died there, March 5, 1534. His father, Pellegrino Allegri, a tradesman in moderate circumstances, caused him to be instructed in various branches of polite learning, and his uncle, Lorenzo Allegri, an artist of moderate ability, taught him the rudiments of painting. His first regular instructions probably were received in the school of Andrea Mantegna, continued by his son Francesco, in Mantua, whence he acquired his wonderful skill in foreshortening. Francesco Bianchi Ferrari is also said to have been one of his masters, and the works of Leonardo da Vinci exercised an important influence on him as a preparation for the manner which he subsequently adopted. He never visited Rome, never studied the antique, unless from such specimens as the cities of northern Italy contained, and seems never to have had intercourse with the great painters of the age, except through their works. Yet by the force of his individual genius he created a manner entirely original, in which movement, variety, and the most delicate gradation of light and shadow, are the principal elements, and carried the art of chiaroscuro to a perfection equalling that attained by Michel Angelo in form and Raphael in expression, or by Giorgione and Titian in color. In 1518, Correggio, having already acquired some reputation as an artist, was invited to Parma to paint a saloon in the convent of San Paolo for the abbess. The subjects were selected from ancient mythology, and the groups of scantily draped gods and goddesses, of graces, nymphs, satyrs, and fauns, were represented with a fulness of life, gayety, and grace of which the severer ideal of contemporary masters had scarcely conceived. The unusual laxity of monastic discipline at the commencement of the 16th century will explain why such a subject was chosen for such a place. A few years afterward the nuns of San Paolo were compelled to keep within the convent gates, and the paintings of Correggio were for centuries withdrawn from public gaze. The reputation which this work gained for the artist procured him in 1520 the commission to execute the frescoes on the cupola of San Giovanni in Parma. He painted the "Ascension of Christ," who appears soaring up to heaven, while below, the apostles, seated on clouds, are watching his departure. The colossal, foreshortened figures are so disposed that the work viewed from below is surpassingly grand. In 1525, on the invitation of the duke Federigo Gonzaga, he went to Mantua, where he painted a celebrated series of mythological subjects: "Leda and the Swan," and "Jupiter and Io," now in the Berlin gallery; "Danaë," in the Borghese gallery in Rome; "Jupiter and Antiope," in the Louvre; and the "Education of Cupid," in the British national gallery. The subjects, appealing to the artist's feeling for grace and the expression of tender and voluptuous emotion, were executed with rare felicity, yet without the grossness which a less refined nature would have deemed incidental or inevitable. The "Jupiter and Io," however, which was once in the possession of Queen Christina of Sweden, having passed into the Orleans collection, the son of the regent duke ordered the face of Io to be cut out and burned, on account of its too voluptuous expression. It was afterward skilfully restored by the French artist Prud'hon. From the depiction of material joys, the artist was called in the succeeding year to decorate the Duomo of Parma with a subject of a very different character. In the centre of the dome he represented the Assumption—the Madonna borne up to heaven by an innumerable throng of rejoicing angels, while the Saviour descends to meet her. Below are the apostles and evangelists. This is esteemed the masterpiece of Correggio, and its glorious life, its bold foreshortening and chiaroscuro, and manifold beauties of color and design, justify the remark which Titian is said to have uttered when he first saw the work: "If I were not Titian, I would be Correggio." The foreshortening here appears, however, to have been carried to such an extent, that the legs and limbs, seen from below, seem more conspicuous than the bodies, and Correggio was reproached in his lifetime with having painted *un guazzetto di rane*, "a hash of frogs." A few years ago some of the cartoons of this work were accidentally discovered in a garret in Parma, and are now in the British museum. Upon its completion in 1530, Correggio returned to his native town, where he passed the remainder of his life. He died of a malignant fever after a few days' illness.—Much misconception has prevailed with regard to the death and the worldly circumstances of this great painter. It was long supposed that he lived in poverty, and that having been paid in copper coin a sum of 60 crowns for one of his pictures, he carried home the load in a sack on his shoulders, and died of an over draught of cold water, with which he refreshed himself on the way. The Danish poet Oehlenschläger has constructed one of his finest dramas on this incident, in which he seeks also to embody the feelings of a great artist laboring in obscurity, and unconscious of his own value. No obscure or unknown man, however, could have painted the great frescoes of San Giovanni or the Duomo, and the prices which Correggio received for these and other works show that he must have lived and died in easy circumstances. He was of an amiable disposition, as the sweetness and innocent gayety of his works would seem to indicate, and of domestic habits; and having no school to spread his name, he lived content in the practice of his art, and for his art. Correggio's works are not so numerous as those of some painters, but nearly every one is a *chef d'œuvre;* and so widely are they distributed, that few public galleries or royal collections are without one or more. They are seldom found in the possession of private individuals. His Madonnas have a mingled expression of dignity, tenderness, and grace, a maternal rapture and holiness, which are almost inimitable. Some of them, such as that known as the *Vièrge au panier*, are evidently studies from the artist's own domestic life. His fondness for life and motion, however, pervades even this class of pictures, and his Madonnas are seldom in repose, but are fondling, or worshipping in an ecstasy of love, the divine infant. The famous picture of the Nativity, in the Dresden gallery, called the *Notte*, in which the light proceeds from the head of the infant Saviour, shows his command over the stronger contrasts of light and shadow; while in his "Mercury instructing Cupid," the gradations are so fine that the shadows seem mutable and aërial, as if between the eye and the colors. The reading Magdalen, in the Dresden gallery, which has perhaps been multiplied through engravings and copies beyond any other picture, is one of the most perfect women ever painted. Among other celebrated pictures are the St. Catharine in the Louvre, the St. Jerome in Parma, the St. George in Berlin, and the "Zingarella" Madonna in Naples. Correggio probably had no pupils, unless the persons who assisted him in executing his frescoes can be called such; but his imitators, who formed what was called the school of Parma, were numerous. Among the latter, the most celebrated was Parmigianino. His son, Pomponio Allegri, followed his father's style, but never acquired a great reputation.

CORRESPONDENCE, or THE SCIENCE OF CORRESPONDENCES, is a technical term in the theological system taught by Emanuel Swedenborg, denoting that peculiar relation which subsists between the divine ideas and the divine works; between the essential and the formal; between the spiritual and the natural; between the mental and the material. While fable, figure, metaphor, comparison, serve merely to liken one natural object to another, for the purpose of illustration, correspondence implies a formative force, and is thus the relation of a producing cause to its resulting effect, as of the soul to the body, and of the various faculties of the mind to the various organs or viscera of the body. Correspondence, in other words, is the embodiment of spiritual archetypes upon the natural plane. Thus truth is to the spiritual world what light is to the natural world. Truth and light, therefore, are correspondences. Love is to the spiritual world what heat is to the natural world. Love and heat, therefore, are correspondences. The understanding is to the soul what the lungs are to the body. The understanding, therefore, and the lungs correspond to each other. So also the affections with the heart as an organ; so in fine with the whole microcosm of the soul with the whole microcosm of the body, the former being the sphere of causes, the latter of effects. It were easy to extend the principle of correspondence from the microcosm to the macrocosm, and to regard the whole material creation as a representative theatre whereon are mirrored forth those primal essences, and living substantial forces, that give form under the Deity to all the organisms of the various kingdoms of nature, and through them elaborate an infinity of valuable uses. The scientific development of correspondence is due to Emanuel Swedenborg, and constitutes one of the leading features of that peculiar system of theosophy of which he is the acknowledged founder. With him it is to the inspired word what mathematical science is to the phenomena of the material universe. It is the key that unlocks its deepest mysteries, and, in fact, reveals revelation. The Scriptures, according to this system of theology, are written with a constant reference to this alleged immutable relation between spiritual and natural things. Thus the name of every created object mentioned in the sacred volume stands as an exponent of that internal spiritual entity, principle, or quality, to which such object proximately owes its existence. On this ground the science of correspondence claims to connect revelation with reason, religion with nature, and God with man.

CORRÈZE, a French department formed out of the ancient province of Bas Limousin, bounded N. by those of Creuse and Haute-Vienne, E. by Puy-de-Dôme and Cantal, S. by Lot, and W. by the department of Dordogne, lying between lat. 44° 55′ and 45° 44′ N., and long. 1° 18′ and 2° 22′ E., deriving its name from the river Corrèze, which falls into the Vézère, a tributary of the Dordogne, and divided into 3 arrondissements, 29 cantons, and 286 communes; area, 2,265 sq. m.; pop. in 1856, 314,982. The mountainous part of the department (Montagne), with summits rising in some instances to the height of 4,000 feet, and covered with snow for most of the year, is barren. The lower part of the department is more fertile, produces good crops of all sorts of grain, and wine of an inferior quality to the extent of about 5,500,000 gallons annually. Chestnuts, which grow abundantly, are the chief food of the poorer class for a portion of the year. The mineral wealth consists of coal, iron, and lead, but the mines are not thoroughly explored, and there are not sufficient facilities for transport, thus limiting the amount yielded by the mining industry to only about $150,000. The value of goods manufactured hardly exceeds $2,500,000 per annum. The poverty of the department compels many of the inhabitants, especially of the mountainous districts, to emigrate annually to other parts of France. Capital, Tulle.

CORRIE, DANIEL, bishop of Madras, born in England in 1777, died in Madras, Feb. 5, 1837, went to British India in 1806, was appointed archdeacon of Calcutta by Bishop Heber in 1823, nominated to the bishopric of Madras in 1834, and consecrated in England, June 14, 1835. He was a fellow laborer with Buchanan, Martyn, Heber, and Turner. He translated Sellon's abridgment of the Scriptures, the English Prayer Book, and several of the Homilies, and other religious works, into the Hindostanee language, and compiled in English the outlines of ancient history for the use of the schools in India.

CORRIENTES, one of the states of the Argentine confederation, bounded E. by Brazil, mostly separated from it by the river Uruguay, N. by Brazil and the river Parana, which separates it from Paraguay, W. by the Parana, and S. by the state of Entre Rios; area, [illegible] sq. m.; pop. in 1855, about 45,000, exclusive of the Indians. A remarkable natural feature of this state is the lake Ybara, which is a vast marsh, except when overflowed by the Parana, when it forms a lake with a superficial surface of about 1,000 sq. m. A large part of the country is covered with forests, which furnish timber suitable for ship and house building. Although the soil is fertile, and produces good crops of sugar cane, rice, tobacco, indigo, and cotton, the inhabitants are mostly employed in the raising of cattle, horses, and sheep.—Con-

RIENTES, capital of the state, pop. 7,843, founded in 1588, is situated on the left bank of the Parana, near the junction of the Paraguay with that river, and is a place of much trade.

CORROSIVE SUBLIMATE. This salt has long been described as a bichloride of mercury, consisting of 2 atoms of chlorine and 1 of mercury; but it is actually composed of 1 equivalent each of mercury and chlorine, and should be known as the protochloride of mercury, a name very commonly given to calomel, which is properly a subchloride, consisting of 2 atoms of mercury and 1 of chlorine. This distinction is the more important to be made, as both these chlorides are powerful medicines, and a mistake in administering one for the other might be attended with the most serious consequences. Corrosive sublimate was known at an early period to the Chinese, and was spoken of by Geber in the 7th century. It is obtained in cakes of small translucent and colorless prisms, clustering together, which are soluble in water, and more readily in alcohol. The specific gravity is variously given from 5.14 to 6.5. The salt fuses at 509°, and boils at 563°, being converted into a colorless vapor of density 9.42. Corrosive sublimate has an acrid and caustic taste, somewhat styptic, and shows an acid reaction in reddening litmus paper. Taken internally, it acts as a violent poison, corroding the parts with which it comes in contact, and producing violent irritation, intense pain in the bowels and stomach, with vomiting and diarrhœa. It is neutralized and its effects mitigated by administering albuminous matters, as the white of eggs, or gluten in the form of flour, or caseous matters, as the curd of milk, with all which it forms insoluble compounds. It is decomposed by protosulphuret of iron, iron filings, and Peruvian bark, &c., which may consequently be used as antidotes. The salt is obtained in an experimental way by heating a globule of mercury in an iron spoon, and plunging it into a bottle of chlorine gas; the metal takes fire and burns, producing the chloride. It may also be obtained by dissolving the red oxide of mercury in hot hydrochloric acid; as the solution cools, the chloride crystallizes. In the large way, it is usually prepared by heating in a retort the protosulphate with a mixture of sea salt; the protochloride sublimes, and is deposited upon cold surfaces, and sulphate of soda remains in the retort. The process of the U. S. Pharmacopœia is to boil 2 lbs. of mercury with 3 lbs. of sulphuric acid, until a white dry mass is left. This when cold is to be rubbed with chloride of sodium in an earthenware mortar, and then distilled. Corrosive sublimate has strong antiseptic properties, owing in part to its forming insoluble compounds with nitrogenous substances. A mere trace of it in a bucket of water, it is stated, serves to preserve for a long time meat that has been placed in it for a few hours. The common use of the substance for this purpose cannot, however, be recommended. The method of preserving wood from decay introduced by Mr. Kyan consists of filling its pores with a solution of this salt. In medicine, it is highly esteemed as a remedy in many cutaneous and other diseases, and in domestic uses it is conveniently applied to wooden bedsteads to keep them free from vermin. Zoological and anatomical collections are also preserved by its application from the attacks of insects, and gum and paste upon papers from those of mice.

CORSAIR, a term employed to denote pirates or their vessels. By the princes of the coast of Barbary the corsairs of their states were commissioned to attack the merchant ships of foreign nations, and were at one period the scourge of the Mediterranean. At the commencement of the present century nearly all the nations of Christendom paid tribute to the Barbary states, but the insolence of the dey of Algiers toward Capt. Bainbridge, on his arrival there in Sept. 1800, with the annual tribute, led to remonstrances on the part of the United States. In 1801, Jussuf, bey of Tripoli, declared war against the United States, from dissatisfaction with the amount of tribute, and a powerful squadron was sent to the north African coast. Tripoli was bombarded by the American fleet in August and September, 1804; and on June 3, 1805, a treaty of peace was concluded between the two countries. In 1815 war was declared by Algiers on similar grounds; but Commodore Decatur soon appeared in its waters with a large squadron, captured several vessels, and in a few days compelled the dey to sign a treaty of his own dictation on his quarter deck. He next humbled Tunis and Tripoli; and the example of the United States was followed by European governments until the corsairs were annihilated.

CORSET, an article of dress enclosing the chest and waist, worn chiefly by females to support or correct the figure. It is usually made of firm cloth, stiffened by rods of whalebone or other material, and furnished in front with a vertical plate of steel or whalebone, 2 or 3 inches wide, called a busk, which rests on the sternum and separates the breasts. Bandages resembling corsets were worn by the Roman matrons during the republic and the empire, at first with the design only of supporting the breasts, but afterward to compress the form and give it an air of slightness, which was esteemed one of the attributes of beauty. Prior to the French revolution, corsets of German invention had been worn for several centuries, which contained rods and plates of whalebone and steel, and were designed both to conceal the defects and exaggerate the beauties of the figure. When tightly laced, they were prejudicial to health, since by pressure upon the lungs and heart the vital functions of respiration and circulation were impeded, and organic inflammations, unhealthy secretions, and vertebral distortions were frequently the result. The emperor Joseph II., seeing a large number of humpbacked women at his court, and attributing the difformities to the stiff and strongly laced corsets, published a decree abolishing the use of the corset in the orphan houses, convents, and benevolent institutions. But his design did not succeed, the despotism of fashion prevailing over his edicts. At the period of the revolution, the French ladies, having adopted the Greek costume, brought into use a very slight corset, which served as a support, but was not laced tightly enough to cause constraint or pain. During the present century women have returned to slight forms, and corsets are sometimes laced so as to compress the vital organs of the body, and compromise the health. The most valuable treatise on the subject is Dr. Bouvier's *Études historiques et médicales sur l'usage des corsets* (1853).

CORSICA (Fr. *Corse*), the Cyrnus of the Greeks, an island in the Mediterranean, about 180 m. E. from France, of which it forms a department, 50 m. W. from Tuscany, and separated on the S. from the island of Sardinia by the strait of Bonifacio, 10 m. wide. It lies between lat. 41° 21′ 4″ and 43° 41′ 7″ N., long. 8° 32′ 10″ and 9° 33′ 26″ E.; greatest length, 116 m.; greatest breadth, 52 m.; area, 3,377 sq. m.; pop. in 1856, 240,183. The predominant religion is that of Rome, and the principal language Italian. It is divided into 5 arrondissements, viz.: Ajaccio, Sartena, Bastia, Calvi, and Corte, which are subdivided into 61 cantons and 355 communes. Capital, Ajaccio. Principal seaport, Bastia. The E. coast is low and remarkably regular; the W. is high and broken by numerous bays and harbors. The interior is traversed by a granitic range, with many summits over 7,000 feet high, wrapped in never-melting snows, while the culminating peak, Monte Rotondo, has an elevation of 9,054 feet. From these mountains torrents descend to the sea, and their deposits have formed on the E. coast a long series of lagoons and marshes. None of the streams are navigable. Among the minerals are iron, lead, antimony, black manganese, excellent granite, porphyry, white marble, limestone, jasper, and amianthus. The uplands are covered with forests of oak, pine, cork, beech, chestnut, larch, the turpentine and wild olive trees, &c.; the date palm, orange, citron, fig, almond, pomegranate, and mulberry flourish; the olive is cultivated; honey and wax are obtained from the forests; the fertile plains, slopes, and valleys produce wheat, maize, barley, cotton, sugar, indigo, tobacco, madder, and the grape; but the wine, amounting to about 6,600,000 gallons a year, is carelessly made and poor in quality. The most valuable domestic animals are the mule and goat; the sheep are small, with coarse black wool, and 4 or even 6 horns, but are prized for their delicate flesh. Among the wild animals are the mouflon, or wild sheep, fox, wild boar, deer, hare, and various kinds of game. The coasts afford valuable fisheries of tunny, pilchards, and anchovies. The climate, except near the marshes, is healthy, though sometimes excessively hot. But the natural advantages of Corsica are less developed than those of most other countries of S. Europe. The art of agriculture is in its infancy: the mines are not worked; the communications with the interior are defective; the manufactures are insignificant. Fruits, wine, honey, wax, oil, cheese, &c., are exported to the extent of about $200,000 per annum; and the value of the annual imports, chiefly consisting of manufactured goods and colonial produce, is about $600,000. The Corsicans are hospitable, temperate, and brave, but indolent, impetuous, and vindictive, and human life, although more secure than in former times, is still frequently sacrificed in the heat of passion or revenge. The cottages, built chiefly on steep hillsides, are often little more than 4 bare walls, with a single opening, which serves for both door and window, and occasionally a second story, the ascent to which is by a ladder. They have no fireplaces, and the furniture is as rough as the building. Four good roads across the island have been made by the French, and there is communication by steam with Marseilles and Leghorn 3 or 4 times a week.—Corsica seems to have been first settled by Ligurians. It was held successively by the Ligurians, Etruscans, and Carthaginians; was conquered by the Romans, 259 B. C.; fell into the hands of the Goths on the dismemberment of the empire; became subject to the Franks in the 8th century, to the Saracens in the 9th, and to Pisa in the 11th; was annexed to the Papal States by Gregory VII.; and after passing again under the power of Pisa, of Genoa, and then of Aragon, finally became in the 14th century a possession of the Genoese, who held it till the 18th, when it became a scene of revolutions, during which a German adventurer, Theodore von Neuhof, was proclaimed king of the island. After his fall the Corsicans under Gen. Paoli achieved their independence, but in 1769 they were subdued by the French. In 1793, Paoli assisted by the English drove out the new masters, and the island was placed under the protection of the British crown; but in 1796 the patriots were again subdued, and in 1814 the island was secured to France by the treaty of Paris. Corsica has produced several eminent men, and above all, Napoleon.—See Jacobi's *Histoire générale de la Corse* (Paris, 1835), and Gregorovius's *Corsica* (London and Philadelphia, 1857).

CORT, Cornelis, a Dutch painter, born at Horn in 1530, died in Rome in 1578. He studied under Hieronymus Cock and Titian, and counted Agostino Caracci among his pupils. He reached great perfection as an engraver, and was distinguished for correctness and taste. Among his most admired works are the "Transfiguration of Raphael," and the "Massacre of the Innocents," after Tintoretto.

CORT, Henry, an English inventor, born at Lancaster in 1740, died in 1800. Having at an early age conceived the idea of making England independent of foreign countries for the supply of iron, he established himself as an iron merchant at Gosport, Hampshire, and afterward erected iron works at Fontley, near that town, where he expended upward of £20,000 in perfecting his processes for puddling and rolling iron. His experiments were so successful, in spite of the most disheartening opposition of the most powerful iron masters of England, that on June 17, 1783, a patent was granted to him "for machinery, furnace, and apparatus, for preparing, welding, and working various sorts of iron," and a 2d patent on Feb. 14, 1784, "for shingling, welding, and manufacturing iron and steel into bars, plates, and rods of purer quality and in larger quantity than heretofore by a more effectual application of fire and machinery." He took into partnership Adam Jellicoe, chief clerk in the office of the paymaster of the navy, and for some time, by contracts with the government, and by other extensive operations, the iron works were placed in a highly flourishing condition. But after his partner's death the navy board seized the works for claims against Jellicoe, involving Cort in onerous lawsuits, and eventually in total ruin. He was compelled to accept employment as superintendent of the works of the same iron masters whom he had enriched by his life-long labors. They secured his services under the promise of aiding him in the recovery of his own establishment. These promises were never redeemed, and the only compensation which he received was a pension of £200 granted to him by the government in 1794. While Cort was bowed down by disappointment at the spoliation of which he had been the victim, his inventions began to exercise a powerful effect upon the iron trade of England, and they are estimated to have, in the present century, given employment to 6,000,000 persons, and to have added £600,000,000 to the national wealth. But even the paltry compensation allowed to him for the 6 remaining years of his life was reduced after his death, and only a pension of £125 accorded to his widow. In 1811 a contribution of £1,000 was offered by a number of iron merchants to his descendants. In the following year the house of commons appointed a committee to report upon the case, but nothing was done. In 1855, however, several eloquent articles appeared in the "London Times," in which Cort was called "the father of the iron trade of the British nation." In 1856, Lord Palmerston conferred a grant of £60 per annum upon Cort's surviving son; and on April 22, 1858, Lord Derby assigned £200 from the royal bounty fund to his 3 daughters.

CORTEREAL, Gaspar, a Portuguese navigator, born in the latter half of the 15th century, died about 1502. He was probably of a distinguished family, engaged in the colonization of the Azores. In 1500 he was appointed by the king of Portugal to command an expedition to explore the northern coasts of North America. He sailed from the Tagus in that year with 2 ships, ranged the shores of the country afterward called Canada, and freighted his ships with 57 Indians, whom on his return he sold as slaves; and the name Labrador (laborer), afterward transferred to a more northern region, is a memorial of his visit. Soon after he set sail from Lisbon on a second voyage to the same regions, but never returned. One of his brothers who sailed in search of him in 1502, was never afterward heard from.

CORTES, the name of the Spanish and Portuguese parliaments. The Spanish cortes is composed of a senate unlimited in numbers, appointed for life by the sovereign, and a house of representatives, of 350, elected for 5 years by the people. The Portuguese cortes is composed of a house of hereditary peers, and a house of representatives, elected for 4 years.

CORTES, Hernan, or Hernando, the conqueror of Mexico, born in Medellin, a small town of Estremadura, Spain, in 1485, died near Seville, Dec. 2, 1547. His father, Martin Cortes of Monroy, and his mother, Donna Catalina Pizarro Altamirano, were both of good family, but in reduced circumstances. Hernando was a sickly child, and during childhood was many times at the point of death. When 14 years of age he was sent to the university of Salamanca to study law. He remained there 2 years, and though no lover of study, he appears not to have neglected his opportunities. Las Casas, no friend, speaks favorably of his education, and says he was "a bachelor of laws and *Latine*." He left the university in 1501, and returned home without leave from his parents, and finding no content in Medellin, determined to seek his fortune in the new world, by accompanying Nicolas de Ovando, also an Estremaduran, who was about to supersede Bobadilla in his command. He met with an accident which prostrated him, while Ovando's expedition sailed; and thereupon determined upon going into Italy to seek service with the "great captain" Gonsalvo Hernandez de Cordova. But arriving in Valencia, he was there taken sick, and passed a year in that town in obscure hardship and poverty. At the expiration of the year he returned to Medellin, and again turned his eyes toward the new world. His parents gave him their blessing and some money, and in 1504, then in the 19th year of his age, he sailed from San Lucar in a merchant vessel for San Domingo. He was received with favor by the governor of Hispaniola, was employed under Diego Velasquez in pacifying a revolt, and at the end of the war received from his countryman Ovando a *repartimiento* of Indians, and a notarial office in the newly-founded town of Azua. He held successively several appointments, and in 1511 accompanied Diego Velasquez, who was sent by the 2d admiral, Don Diego, to subdue and colonize Cuba. He afterward held the office of alcalde of Santiago, in the new colony. Meantime he married Doña Catalina Juarez, one of a family of Spanish ladies who had come over in the suite of Maria de Toledo, the vicequeen. After his marriage he employed himself and his Indians in getting gold. "How many of whom [the Indians] died in extracting this gold for him, God will have kept a better account than I have," says Las Casas. When Grijalva, the lieutenant of Velasquez, returned from the discovery of Mexico, without having attempted the settlement of that country, Cortes was appointed in his place to the command of a new expedition. He was 19, and of graceful address, amiable manners, and great skill and address in all military exercises, when he left home. Fourteen years after, when, at the age of 33, he received this first independent command, all his powers had matured, he had gained largely in experience, and to the ardent impetuosity of youth had succeeded that indefatigable activity, coolness, and self-command which stamped him a commander of men. He was not without enemies; had twice narrowly escaped hanging at the hands of his patron Velasquez, so it is related; and at the last moment Velasquez repented of the appointment he had made, and endeavored to stop the expedition. But Cortes hastened his preparations, and on Nov. 18, 1518, set out from Santiago with 10 vessels, 550 Spaniards, 200 or 300 Indians, a few negroes, 12 or 13 horses, 10 brass guns, and some falconets. The chief members of the expedition contributed toward the expenses of it, and Juan Sedeño, the richest man in the armament, possessed a ship, a mare, a negro, and some Cabazi bread and bacon. Cortes purchased a good mare of one of his fellow voyagers for some gold cord. Picking up stores by the way, sometimes without paying for them, he arrived at Trinidad, where shortly after an order came from Velasquez to deprive Cortes of his command. A similar order awaited him on his arrival at Havana, but in neither place could they be enforced; and writing a letter of remonstrance to Velasquez, Feb. 10, 1519, Cortes left Havana for the island of Cozumel on the coast of Yucatan. On March 4 he first landed on the shores of Mexico, in the province or country called Tabasco; and here presently he fought his first battle with the natives, who proved exceedingly brave, but who were awestruck at the sight of horses and the roar of the artillery. At San Juan de Ulua he first heard of the native sovereign called Montezuma; that he reigned over an extensive empire which had endured above 3 centuries; that 30 vassals, called caciques, obeyed him; and that his power and riches were immense. He determined to see this Montezuma; asked some officers sent to him by Montezuma: "Has your king any gold?" and on being answered in the affirmative, said with grim humor: "Let him send it me, for I and my companions have a complaint, a disease of the heart, which is cured by gold." He laid the foundation of the town of Vera Cruz as a post to be left in his rear; caused himself to be chosen captain-general of his new colony; destroyed his ships, to render return impossible; took the part of several native tribes against Montezuma's tax collectors, and thus ranged them on his side; and finally, on August 16, leaving a small garrison from his meagre force at Vera Cruz, set off for the city of Mexico, to "see what sort of thing the great Montezuma was, of whom they had heard so much." The republic of Tlascala, though so bitterly at feud with Montezuma that the Tlascalans refused to use salt because it was only to be got in the dominions of their enemy, opposed the march of Cortes inland for fear that he might wrest their liberties away. After 4 battles, wherein he each time defeated an overwhelming force of the enemy, he entered the city of Tlascala on Sept. 18. The Spaniards were thought to be of divine origin, and human beings were sent to them as sacrifices. Ambassadors from Montezuma had met Cortes before he entered Tlascala, but with no important consequences. He endeavored, but in vain, to persuade the Tlascalans to abjure their religion; prevailed upon them to own themselves vassals of the king of Spain; and after a 20 days' stay in the city, marched toward Mexico by way of Cholula, accompanied by some thousands of his new allies. Escaping an ambuscade set for him by the Cholulans, at the instance of the Mexicans, and punishing the people for their proposed attack, he continued his march, and arrived before Mexico, Nov. 8, 1519, with 6,000 natives and his handful of Spaniards; was received with great pomp by Montezuma and his subjects; immediately secured a stronghold in a beautiful palace assigned as his quarters; and using the occasion of an attack made by a party of Mexicans upon some of the Spaniards as a temporary justification for one of the boldest acts in all history, took Montezuma captive in his own palace, and conveyed him to his quarters under threats of instant death if he made a sign for help to his subjects. The 17 persons who had attacked the Spaniards were captured and burned to death before the gates of the imperial palace. Montezuma was placed in irons during the execution, and forced to acknowledge himself a vassal of Charles V. Taking prisoner also Caminatzin, the bravest of the king's nephews, Cortes now persuaded Montezuma to induce all his nobles and vassals to swear allegiance to the king of Spain; and this done, he obtained of the fallen king a great quantity of gold, no less than the value of 100,000 ducats. Soon, however, he was informed of the landing of an armament under the command of Narvaez come to displace him. Leaving 200 men in Mexico, whom with unparalleled audacity he recommended to the care of Montezuma, as a vassal of Charles V., he took 70 men, was joined by 150 more whom he had left at Cholula, and captured Narvaez, who was encamped in a city of the Cempoallans, with his 80 horse, 900 men, and 10 or 12 field pieces. The defeated troops readily ranged themselves under his standard; but returning to Mexico, Cortes found that the people had revolted against the Spaniards. Montezuma, endeavoring to address his subjects, was slain. The Spaniards were furiously attacked, driven out of their quarters, and out of the city; their rearguard was cut to pieces; and after a harassing retreat of 6 days, the Mexicans rashly offered battle on the plain of Otumba, and here, on July 7, 1520, Cortes gained a victory which decided the fate of Mexico. He immediately proceeded to Tlascala, collected an auxiliary native army, and, having subdued the neighboring provinces, marched against Mexico, and took the city after a gallant defence of 75 days, Aug. 13, 1521. The accounts of his exploits which he sent to Europe caused his irregular conduct to be forgiven, and excited the liveliest admiration of his genius and skill. He was declared governor and captain-general of Mexico, and had conferred upon him the marquisate of Oajaca, with a considerable revenue. His course of conquest, however, was such as to embitter the natives against him. He was particularly zealous to destroy their idols, and ever anxious to convert these pagans by force to the doctrines of Christianity. They took up arms against him, but in vain; European arms, valor, and zeal conquered on all hands. Guatimozin, the new emperor, a man of greater force than Montezuma, was, with a number of his caciques, executed with great cruelty, by Cortes's orders. But his victories caused him to be dreaded at home; commissioners were sent out to watch his course; and while he was completing his conquests his property was seized and his servants put in irons and imprisoned. Indignant at such treatment, Cortes returned to Spain in great splendor, to appeal for justice. He was received with every distinction, decorated with the order of St. Iago at the hands of the emperor, and returned to Mexico with new titles, but with diminished power; the military authority only remained in his hands, a viceroy having been intrusted with the administration of civil affairs. In 1536 Cortes visited the peninsula of California, and surveyed part of the gulf which separates it from Mexico. Disgusted with the men sent out to watch him, he returned again to Europe, and accompanied Charles V. (who had received him coldly) on a disastrous expedition to Algiers, in 1541, serving as volunteer, and having a horse shot under him. On the return of the expedition he was utterly neglected; could not obtain an audience; one day forced his way to the emperor's presence and upbraided him with his ingratitude; then withdrew formally from court, and died in solitude, in the 63d year of his age. Five letters addressed to Charles V., and detailing his conquests, are the only writings of Cortes, who was beyond doubt the foremost of the many remarkable men whom the discovery and conquest of the new world brought out from obscurity.

CORTLAND, a central co. of N. Y.; area, 480 sq. m.; pop. in 1855, 24,575. It has an uneven surface and a good soil, adapted both to grazing and tillage. It is well supplied with water, and contains salt and sulphur springs. Iron ore is also found in some localities. In 1855 the productions were 41,860 bushels of wheat, 240,703 of Indian corn, 882,786 of oats, 56,769 tons of hay, 2,379,257 lbs. of butter, and 708,679 of cheese. There were 28 grist mills, 68 saw mills, 1 cotton factory, 1 paper mill, 1 woollen factory, 2 factories of farming implements, 13 tanneries, 2 newspaper offices, 179 school houses, and 51 churches. The county was formed in 1802 out of a part of Onondaga, and named in honor of the Van Cortlandt family, who were among the first and most distinguished of the Dutch settlers of the state. Capital, Cortland Village.

CORTONA, a city of Tuscany, in the district of Arezzo, in the Val di Chiana, pop. about 5,000, is the see of a bishop, and contains the palazzo Pretorio, the seat of the celebrated Etruscan academy, founded in 1726, comprising a library and a museum of Etruscan antiquities. Cortona is one of the most ancient cities of Italy, and was once a member of the Etruscan confederacy, situated near the lake Thrasymenus (now Lago di Perugia). It is said to have been originally built by the Umbrians, and to have been in the possession of the Pelasgians for a considerable period before it fell into the hands of the Etruscans. It was afterward captured and colonized by the Romans, but under their dominion it sunk into insignificance and obscurity. Among the many interesting ancient relics of Cortona are the remains of the Cyclopean walls which surrounded the original city, and a great sarcophagus in which the body of the consul Flaminius is said to have been deposited after the battle of Lake Thrasymenus (217 B. C.).

CORTONA, PIETRO BERRETTINI DA, an Italian painter and architect, born in Cortona, Nov. 1, 1596, died in Rome, May 16, 1669. While a boy he was put to study painting at Rome, and at an early age excited the admiration of Pope Urban VIII., who employed him to decorate a chapel in the church of St. Bibiena, and also to execute the frescoes on the ceiling of the grand saloon of the Barberini palace. These, and the frescoes in the Pitti palace in Florence, are among the most remarkable specimens of the art in the 17th century. As an architect he also exhibited a peculiar facility. His finest work was the restoration of the church of Santa Maria della Pace in Rome.

CORUNDUM, the name of a mineral species which includes several varieties, as sapphire, emery, corundum, &c. They consist of alumina in a greater or less degree of purity. Sapphire is crystallized alumina, free of impurities; emery, a granular variety; and corundum comprises the opaque qualities which are for the most part of dark colors. They are remarkable for their hardness, being inferior only to the diamond in this respect. (See EMERY and SAPPHIRE.)

CORUNNA (Span. *Coruña*), a N. W. province of Spain, in the ancient province of Galicia, bounded N. and W. by the Atlantic ocean, and divided into 14 districts; area, 4,899 sq. m.; pop. in 1857, 573,141. The coast is rugged by the Rev. Jacob Grigg, an English clergyman of good education. Here, when about 14 years of age, Thomas first began to exhibit that talent for oratory which has since so distinguished him. Except a short time afterward, with an Irish schoolmaster who made great pretensions to mathematical science, this school of Mr. Grigg closed Mr. Corwin's educational advantages; yet he was always engaged in studying some book or subject, whether at school or not, when not actually employed in other business. This continued to be his habit throughout his early life, and he never lost more time in amusements or company than necessary courtesy required. In 1814 he entered the clerk's office of Warren co., then or soon after under the charge of an elder brother, Matthias Corwin, jr. Here he continued until 1815, when he commenced the study of the law, and in May, 1818, he was admitted to the bar. From his first entrance on the practice of his profession he was the leading spirit of the courts which he attended, comprising in a short time some 4 or 5 counties. As a lawyer, beside his power as an advocate, he was distinguished for keenness of discrimination in the use of authorities and the management of evidence. But, when excited by any peculiar event in the progress of a trial, his eloquence was unequalled in his day at the bar in Ohio. In 1822 he was elected to the house of representatives of the state legislature, and soon distinguished himself in a speech in opposition to a bill proposing to restore public whipping as a punishment for small crimes. Such a law had been previously in force for a few years in Ohio, and a member from Hamilton co., where such crimes seemed to increase with the growth of Cincinnati, thought the old practice of whipping was the only remedy. Corwin successfully opposed the bill in a speech which is remembered to this day. After serving in the state legislature for some 7 years, he was elected to congress in 1830. He had supported Mr. Clay for president in 1824, when he received the electoral vote of Ohio. In the presidential election of 1828 he had been the supporter of John Quincy Adams. During the administrations of Jackson and Van Buren he uniformly acted in concert with the whigs in regard to all controverted political questions between those administrations and the opposition. In 1836, and again in 1840, he supported Gen. Harrison. Having been selected in 1840 as the candidate of the whigs for governor of Ohio, he delivered a brilliant speech in defence of Gen. Harrison, in reply to an attack of Gen. Crary of Michigan, which probably suggested the policy of bringing him into more active service during the presidential canvass of 1840. Accordingly, he made speeches in almost every county of the state, discussing the political topics of the day. Immense crowds thronged to hear him, and he thus contributed more than any other person to swell the majority by which Gen. Harrison carried the state. Mr. Corwin was elected to the senate of the United States in 1845, and was consequently a member of that body in 1846 when war with Mexico was declared, or rather affirmed to exist by act of Mexico. He boldly denounced the attempt to conceal the intentions of the executive and party in power of possessing themselves of Mexican territory which they had failed to purchase by treaty. That speech on the Mexican war is perhaps the ablest as it will be the most permanent of Mr. Corwin's efforts. In 1848 he supported Gen. Taylor as a candidate for the presidency; and on the death of Gen. Taylor in July, 1850, he received from Mr. Fillmore the office of secretary of the treasury, which he filled until March 4, 1853, when he returned to Lebanon, Ohio, where he again engaged in the practice of his profession. In 1858, however, he was again elected by the 7th Ohio district to the house of representatives in congress. In regard to the questions which have been recently agitating the public mind on the subject of slavery, Mr. Corwin's views and opinions are generally those advocated by the whigs in 1844, when Henry Clay was their candidate for the presidency, and differ considerably from those of both the republican and democratic parties.

CORYAT, Thomas, an eccentric English traveller, who called himself the "Odcombian legstretcher," from his extensive and indefatigable travels on foot over the continent of Europe and various eastern countries, born at Odcombe, Somersetshire, in 1577, died at Surat, India, Dec. 1617, was the son of the rector of his native town, received an excellent university education, published in 1611 some of his travelling experiences, "Coryat's Crudities," &c., a curious book, to which quizzical verses in various ancient and modern languages, written by Ben Jonson, Donne, and other authors, are appended. The latter were afterward published separately under the title of "Odcombian Banquet," with an advertisement reflecting satirically upon Coryat, who was a butt of the wits with whom he associated in London. In a second volume, however, entitled "Cramb, or Colwort Twice Sodden," published the same year, he protested that the verses were appended to the former without his consent. In his first journey, which occupied 5 months in 1608, he travelled nearly 2,000 miles in Europe, about one-half of which distance he walked. He departed on his second journey in 1612, explored the Levant, resided for a time at Constantinople, examined the vestiges of Troy, visited as many of the sites of the 7 churches of Asia Minor as he could discover, and reached India with the intention of proceeding thence through China, the plains of Tartary, and Ethiopia, and of "casting his eyes upon many other places."

CORYBANTES, in antiquity, the priests of Cybele or Rhea in Phrygia. They celebrated the worship of their goddess by arranging themselves in full armor and performing licentious dances in the forests and on the mountains, to the music of flutes, drums, and cymbals. Their name is said to have been derived from their county yielded 897,016 bushels of corn, 516,918 of wheat, 195,629 of oats, 14,240 tons of hay, and 174,919 lbs. of wool. There were 67 churches and 6,208 pupils in public schools. Organized in 1811. Capital, Coshocton.

COSINE, in geometry, the sine of the complement of any angle. The word was first used by Gunter, who introduced the prefix *co* as an abridgment of complement.

COSMAS OF PRAGUE, or Cosme, author of *Chronicon Bohemorum*, one of the earliest histories of Bohemia, born in 1045, died Oct. 21, 1125. The 1st part of his work contains the earliest traditions of Bohemia to 1038, the 2d part reaches to 1092, and the 3d and last part to 1125. The first edition was published by Freher in 1602, and the last edition is contained in Pelzel and Dobrowsky's first volume of *Scriptores Rerum Bohemicarum* (Prague, 1783).

COSMETICS (Gr. κοσμεω, to embellish), articles employed with the intention of beautifying the skin. They include preparations for giving a white ground, corresponding to that in pictures, upon which are laid the various colors. The least objectionable of the articles made for this use is perhaps the mixture of hydrated oxide of bismuth with the subnitrate of the same metal, known as the magister of bismuth. It is obtained as a precipitate, when pure water is largely added to nitrate of bismuth. Applied to the skin, its only injurious effects appear to be the interruption it causes to the insensible perspiration, which after long continued use produces a tendency to clamminess; a slight nausea, too, is sometimes experienced in consequence of its use, accompanied with spasms and flatulence. It has the disagreeable inconvenience of being liable to change its color upon the skin to black, should it be exposed to any gas containing sulphuretted hydrogen in mixture; and if this should reach but one side of the face, a most striking contrast would be developed in the appearance of the two cheeks. The perfume of the onion also acts to convert this cosmetic into the black hydrosulphuret of bismuth. Cosmetics, however, include many harmless lotions designed for softening the skin, such as the pomades of sweet almonds and of cocoa, balm of Mecca, and the distilled waters of the rose, plantain, &c., and various preparations of oils. Some applications for the hair are also known as cosmetics by the perfumers.

COSMO. See Medici.

COSMOPOLITE, or Cosmopolitan (Gr. κοσμος, world, and πολιτης, citizen), a citizen of the world; a person who has no fixed residence, and, without being particularly at home anywhere, is nowhere an alien. The name is also applied to any social theorist who would form all nations into one community free from national prejudices and attachments, and make the same ideas and institutions of religion, society, and government common to the whole family of man.

COSSACKS, a warlike tribe of S. and S. E. Russia, those of Little Russia (Malorussians) and those of the Don forming its chief divisions. In their own as well as in the Russian language they are called Kazaks, which in Turkish designates robbers, and in the dialect of the Tartars free, light mounted warriors. Whether this is the origin of their name, or whether they have inherited it from a more eastern people, is a matter of controversy, as well as whether they came into Russia as a horde from the east, and spread as far as the Dnieper, or whether they have been conglomerated into a national body, through a long course of time, from various fragments of roving or fugitive neighboring tribes. Certain it is that about the middle of the 14th century the banks of the southern Dnieper and of its tributaries were settled by Russians, who fled before the invading Poles, built villages and towns, were joined by people from the neighboring borders, and thus formed the bulk of the warlike Malorussian tribe, which so often appears in the border wars of the Poles, Russians, and Crimean Tartars. Stephen Bathori, one of the ablest kings of Poland, constituted these Cossacks of the Ukraine the guards of the S. E. Polish frontier, giving them a regular military organization under hetmans (Russ. attamans, or chiefs). But the extortions of Polish officials, and religious persecutions practised by Polish Jesuits under the following reigns, exasperated the minds of the Cossacks, who belonged to the Greek church, and their insurrection under Chmielnicki (1648) was stained with the wildest deeds, and ended with their submission to Russia (1654). But a new rule proved no less oppressive, and a part of the tribe was ready to follow Mazeppa, their gallant attaman, and to join Charles XII. against Peter the Great. For this attempt, which failed, the czar took bloody revenge after his victory at Pultowa, and many of the Cossacks fled to the Crimea, whence they were allowed to return under the reign of Anna. Of these western Cossacks, the Zaporogians (in Slavic, those beyond the cascades, viz. of the Dnieper), and among them especially the Haydamaks, were regarded at all times as the boldest, fiercest, and most predatory. In their wild passion for free and independent life, the latter despised marriage, and recruited their numbers by kidnapping children. The eastern Cossacks appear in the service of the Russian czars as early as the first half of the 16th century. Before the cruel severity of Ivan the Terrible, the adventurer Yermak fled with a small band of Cossacks to Siberia, roved over its vast plains, and gave it to Russia for his pardon. Some of their revolts were as dangerous to Russia as were those of the western Cossacks to Poland; and that under Pugatcheff, during the reign of Catharine II., shook the empire to its very foundation. Since the bloody suppression of this revolt, the chief object of the government has been gradually to deprive them of their independence, by transforming their bodies into more regular military organizations; and the dignity of chief attaman is now vested in the crown prince of

Russia. The eastern division, which has been strengthened by transplantations from the western under Catharine II., forms now the great bulk of the Cossacks. Their chief province is the vast steppes W. of the Don, which gives the name to the tribe, with Tcherkask, a kind of Venice near the mouth of that river, as capital, it being the richly decorated seat of their chief, the attaman, as well as of a bishop of the Greek church. South-east of them live the Tchernomoreans (in Russian, those of the Black sea), with Ekaterinodar on the Kooban; east of these the Terekians, whose chief places are Mosdok and Kisliar on the Terek; the Volgaic and Uralian tribes live near the lower course of the rivers from which their names are derived; others still further east. They are divided into districts and *stanitzas* (settlements). They are equal among themselves, elect their officers, of whom only the attaman is confirmed and salaried by the government, and are free from taxation. Their chief occupations in time of peace are fishing and breeding of cattle; agriculture, commerce, and industry are little developed. Horses form their chief riches; from 5 to 10 are possessed by the poorest of the people, hundreds by the richer. In times of war all men from 18 to 50 years of age are bound to serve on horseback. They provide their armor at their own expense, but have the free choice of their dress. Their arms are a lance 10 to 12 feet long, a carabine, pistols, and a sabre; some use the bow and arrows. Their horses are small and poor looking, but swift and indefatigable. They are divided into *polks* (regiments), subdivided into hundreds, fifties, and tens. They form no battle array, attack with fury amid wild hurrahs, disperse, and attack again. They are particularly expert in surprising and intercepting small detachments, in annoying an army on the march, and in deranging or pursuing an enemy in retreat or in flight. It is well known how dreadful they were to the French retreating from Moscow. Their sharp senses make them beside excellent videttes. The number of all the Cossacks of Russia is variously estimated at 1½ to 3 millions, able to furnish an immense host of warriors. Their language is the Russian intermixed with Polish and Tartar words. They adhere to the Greek creed. They are strong, hardy, agile, and active, and distinguished from the Russians by a more handsome and cleanly appearance. Most of them wear beards, round caps, and wide trousers. The Cossack with his horse, like himself the free child of the steppe, his roving spirit, his love of gallant and warlike adventures, is a frequent subject of Polish and Russian poets. Of the former, M. Czajkowski (now Sadik Pasha) has not only painted their life in a series of romances, but also succeeded in forming and commanding a body of Turkish Cossacks, mostly descendants of fugitives from Russia, under the name of Cossacks of the sultan, in the war of 1854–'5.

COSSÉ, CHARLES DE, comte de Brissac, marshal of France, one of the first generals of his time, born in 1505, died Dec. 31, 1563. He served at the siege of Naples in 1528, was made colonel-general of the French infantry in 1542, fought against the English and imperialists in Champagne and Flanders in 1544–'46; was made grand master of the artillery in 1547; governor-general of Piedmont in 1550, where he proved himself superior to his opponent, the marquis of Gonzaga; governor of Picardy in 1559; commander of Paris in 1562; and governor of Normandy in 1563. Under Henry II. he owed his position to Diana of Poitiers, with whom he was a favorite.

COSSIPORE, a manufacturing suburb of Calcutta, Hindostan, on the left bank of the Hoogly, 6 m. N. of Fort William. It contains a foundery for the casting of ordnance for the military service of India, erected on the best European model, and said to be one of the most complete and perfect in the world. Specimens of the ordnance cast there were sent to England by the marquis of Hastings, and pronounced by a committee of artillery officers superior to those of the royal arsenal in point of workmanship and finish. The company's artillery officers are here instructed in the casting of guns on their first arrival in India. Cossipore is a sacred place in Hindoo estimation. It has numerous temples, whither pilgrims resort from all quarters, and an active trade with N. W. Hindostan.

COSTA, MICHELE, an Italian musician, born in Naples about 1810, and educated in the conservatory of that city. In 1830 he settled in England, where he soon after became director of the orchestra at the king's theatre, a position which he held until 1847, when he transferred his services to the Covent Garden opera house. He has also for many years conducted the concerts of the philharmonic and sacred harmonic societies, and since 1849 has directed the Birmingham festivals. In these capacities he has displayed remarkable ability, and is one of the most popular musicians in England. As a composer he is best known by his oratorio of "Eli."

COSTA, PAOLO, an Italian author, born at Ravenna, June 13, 1771, died Dec. 21, 1836, taught belles-lettres at Treviso, Bologna, and Corfu; published new editions of Dante in 1819 and 1830, with illustrations; undertook, in concert with Orioli and Cardinali, the revision of the great Italian dictionary of the academy della Crusca (1819–'28); translated Anacreon's odes and Homer's Batrachomyomachia and Schiller's "Don Carlos" into Italian, the first in conjunction with Macchetti; wrote an excellent novel, *Demetrio di Modone*, taking his theme from "Gil Blas;" wrote against Mesmerism and against Lamennais; gained a reputation as a writer on metaphysical subjects, but was less successful as a dramatist. His complete works were published in Bologna in 1825, and in Florence, 1829–'30.

COSTA-CABRAL, ANTONIO BERNARDO DA, duke of Thomar, a Portuguese statesman, born in 1803 at Fornas d'Algostra, in the province of Beira, received his education at the university of Coimbra, was appointed by Dom Pedro government attorney in the supreme court of Oporto, and officiated afterward as judge in one of the courts of Lisbon; was chosen to the house of representatives in 1835, and ingratiating himself with the court by his ultra conservatism, as well as by his abilities, he was appointed prime minister, March 7, 1838, but relinquished this position 2 months afterward, when the queen, yielding to the clamor of the people, adopted the liberal constitution of 1820. In 1841, however, he was reinstated in his position. In the following year (Jan. 19, 1842) he instigated an insurrection in Oporto, which resulted in the restoration of the constitution that had been promulgated by Dom Miguel in 1826. Supported by the court, the cortes, and by his own brother Sylva, who officiated as governor of Lisbon, Costa-Cabral proceeded now to annihilate the last vestige of liberty in Portugal, abolished the decree of the irremovability of the judges, arrogated to himself the supreme control of the army, established a censorship in the public schools, suppressed the universities, saddled the people with onerous taxes, squandered the public money, and forfeiting at length the regard of all parties, was driven from power, May 17, 1846. In 1849, however, he was reappointed prime minister, but only to inaugurate a still more stringent dictatorship. Impoverishing the people by his unscrupulous system of expenditure, contracting new loans and imposing new taxes, he offended at the same time the national pride by his conduct of the indemnity question with Great Britain and the United States; and the outcry against his proceedings became so irresistible, that his own brother Sylva, who had been a member of his cabinet as minister of justice, would not any longer serve under him, and became leader of the opposition in the cortes, which body was now determined on his overthrow. To accomplish it, he was charged on Feb. 5, 1851, with having defrauded the treasury by importing goods for his private use from abroad without paying the duty. This accusation, however, was abandoned, but a vote of censure against his government was passed on occasion of taking the sense of the house on a clause in the new electoral law. Costa-Cabral was compelled to tender his resignation, but the queen declined accepting it. In the mean time, however, Saldanha set on foot a revolution at Cintra, which spread rapidly over the whole kingdom, and put an end to Costa-Cabral's administration (Feb. 26, 1851). Saldanha became prime minister of Portugal, and Costa-Cabral fled to England, but returned to Lisbon in Feb. 1852. He has since resumed his seat in the house of representatives, and is now (Jan. 1859) a member of the council of state, hated by the people, but taking a foremost position among the statesmen of Portugal.

COSTA RICA, a republic of Central America, situated between lat. 8° and 11° 16′ N., and long. 81° 40′ and 85° 40′ W. Her N. boundary was established by treaty, signed at San José on April 15, 1858, between her and Nicaragua, as follows: From the mouth of the San Juan river, and the extreme point of the E. shore of the port of San Juan del Norte (Greytown), on the Atlantic, up the right bank of the stream to a spot 3 m. below the Castillo rapids, hence by an imaginary line 2 m. distant from the river and the margin of the lake of Nicaragua to the river Sapoa, which it crosses, finishing on the shore of Salinas bay on the Pacific. The Atlantic and Pacific coasts of Costa Rica run parallel to each other, from N. W. to S. E. The S. E. boundary remains still unsettled, New Granada claiming and exercising jurisdiction as far W. as the mouth of the river Doraces on the Atlantic, thus possessing herself of the magnificent bays of Boca del Toro and Chiriqui, the whole of which Costa Rica claims by drawing a straight line from Point Burica on the Pacific to a small island on the Atlantic coast, named Escudo de Veragua. The area is computed at 8,200 square leagues; but only a very small portion of the country is inhabited, the remainder being unexplored territory, mountain, impervious forests, and swamp.—Costa Rica is topographically separated into 2 divisions, the coast or low lands on both sides of the great Cordillera, and the table-lands, or central valleys, ensconced in the mountains. The climate on either coast, at places where there are settlements, is, according to the locality, more or less sickly; while in the valleys of San José and Cartago, which are 4,000 feet above the level of the ocean, it is, for a tropical climate, decidedly healthy, the only endemic diseases being a mild form of fever, a tendency to dropsy, and, in the lower classes, to wens. Here, in the high lands, the Asiatic cholera had never made its appearance, when, unfortunately, it entered for the first time in the train of the army when it returned from the Walker war in Nicaragua (1856). What renders the climate very trying to the European and North American is the length and severity of the rainy season, which sets in during the month of April, increases gradually in intensity up to August or September, breaks up toward the middle of November, and generally ends with the last days of that month. During this season the roads are nearly impassable, and even on that which unites together the old and the new capitals, and these cities to the port of entry and export (Punta Arenas, on the gulf of Nicoya), the mud becomes so deep that the mules (the only means of conveyance or transport) sink into it frequently to above the girths, and sometimes even remain fast. The mornings are fine, the rain generally beginning at 1 or 2 P. M., and the scene the traveller witnesses at the rise of the storm is one of the interesting sights peculiar to these regions. Standing on the great square of San José, or on the savanna outside the city, whence he commands a whole view of the valley, he will see at that hour, curling over the summit and high peaks of the Cordillera which completely yearly to near $1,500,000, for which the Costa Ricans make a return more or less complete, by their exports of coffee and other produce of the soil. The coffee crop varies yearly from 80,000 to 120,000 quintals, the value of which ranges at the port of exportation from $9 to $12 per quintal; thus the exports in coffee may be taken at an average of over $1,000,000 yearly. The product of the country in sugar (*chancaca*) is far below that of coffee, and nearly all of this staple is raised under contract with the government for supplying its manufactures of rum; the exports of sugar do not exceed yearly an average of 5,000 quintals. To these articles may be added a few thousand hides, a few hundred quintals of sarsaparilla, and a few hundred pounds of tortoise shell, the aggregate value of which does not rise above $50,000. The cacao, which is of an excellent quality, is all consumed in the country; and in some localities, such for instance as Moïn, this bean has a sufficiently high and fixed value to be used as a medium of exchange in the place of coin. Finally, a bank of discount, of deposit, and loans on real estate and goods, has been established in the capital, and began operations in the spring of 1858 under a most liberal charter and guarantee from the government, which accepts its notes as the legal currency of the state. Though there is a mint in Costa Rica, at San José, the specie currency is, nevertheless, mostly made up of American half eagles, British sovereigns, and French 20 franc pieces; the two former have a legal fixed value of 5\frac{25}{100}$, and the latter a conventional one of 4\frac{25}{100}$. The import duties levied by the custom house are not regulated, as in other countries, by the value of the imported goods, but by the gross weight of the packages; this system was adopted to avoid frauds, as each description of goods has been taxed with a regard to real value as compared to weight, and a credit of 6 months is allowed the importers for payment.—There is no direct taxation in Costa Rica, the sources of public revenue being the monopolies of spirituous liquors and of the sale of tobacco imported from San Salvador and the United States, and the custom house duties levied on all foreign goods, the entry of which is not free. The sale of government lands, called *tierras valdias* or *valdios*, also brings in yearly a few thousand dollars; and, lastly, the estate-alienation tax contributes its mite to the budget. The revenue of Costa Rica may be estimated, before the war with Walker, at $250,000, leaving a surplus over the expenditure amply sufficient for the prosecution of any works of public improvement. Foreigners are authorized to hold real estate in their own name, and to transmit it after their death by testament; but it is important, when they become possessed of it by private purchase, that they ascertain that the right of preemption has been attended to in the sale, as the non-fulfilment of this law would invalidate their title. This law requires that the vendor should successively inform his immediate neighbors adjoining on the property of the intended sale (beginning with the neighbor whose land has the greatest extent of border thereon, and thus in gradation), giving each in turn the option of taking the property for sale at the offered price.—Costa Rica is divided administratively into 5 provinces: San José, Heredia, Alajuela, Cartago, and the Guanacaste, now named Monrovia. The province of San José is in every respect the most important. It is the seat of government, it produces nearly the whole of the coffee crop, and it is the most populous. The militia of the country numbers some 8,000 or 9,000 men, though not more than 4,000 or 5,000, if so many, can be mustered at the reviews held annually by the president. The government is formed of an executive and a congress, and is under the supreme administration of a president elected for 6 years. The president chooses his own cabinet, and appoints all the public servants, and he is *ex officio* general-in-chief of the Costa Rican forces. The congress of Costa Rica is not divided into 2 houses, there being no senate, but is simply a house of representatives, composed of 12 members, elected by a suffrage in the second degree for 6 years, one for each electoral district, and renewable by half every 3 years. The vice-president of the republic is *ex officio* the president of congress. The judicial power, which dispenses justice according to the old Spanish law, with modifications from the French code, resides in the following courts and magistrates: A supreme court, composed of a president called *rejente*, 5 judges, an attorney-general, and 9 *suplentes* or supplementary magistrates. This court is divided into 2 chambers (1st and 2d *sala*), each formed by a president, 2 judges, and 2 supplementary magistrates. Both of these chambers are courts of appeal. Every Monday both chambers united, in full bench, meet as the supreme court, under the presidency of the rejente, to determine and decide upon all dubious points of law brought before them by the inferior courts. It is before this high court only that a member of congress can be sued. Next, and inferior to the supreme court and its 2 chambers, are the judges of first instance. Of these magistrates, there are 2 for the capital and province of San José, one for civil, the other for criminal cases. The other provinces have each but one judge of first instance, who decides upon all cases both civil and criminal. Punta Arenas, being a free port, has its own magistrates. For each provincial capital there are 3 alcaldes with 3 suplentes, who, when not on the bench, form the municipality or town council. In the cantons or rural districts there are other alcaldes, whose number varies according to population; and still below these there are justices of peace, who decide cases of a value above $1 but not above $2; and lastly, a petty law officer, whose jurisdiction is without appeal, cases below the value of $1 being of his competency. The judicial power is in Costa Rica, as in all civilized countries, independent of the execulogne were commenced by M. Coste in 1855. A member of the academy of science since Feb. 10, 1851, M. Coste has written much on natural history. His *Cours d'embryogénie comparée*, in 1837, was followed the next year by *Ovologie du kanguroo*, written in reply to letters from the late Robert Brown. Among his more recent productions are *Instructions pratiques sur la pisciculture* (1853, 2d edit. 1856), and *Voyage d'exploration sur le littoral de la France et de l'Italie* (1855). The last gives an interesting account of his experiments in fishes in those countries.

COSTELLO, Louisa Stuart, an Irish authoress, born in 1815, whose early poetical effusions attracted the attention of Thomas Moore, to whom she dedicated, in 1835, her "Specimens of the Early Poetry of France." Subsequently she wrote several books of continental travel and historical novels, and one of the latter, the "Queen's Poisoners," was translated into German. Among her ballads, one entitled "Queen of my Soul" has attained a wide circulation. Among her subsequent works are "Memoirs of Eminent English Women" (London, 1844), the "Biography of Jacques Cœur" (1847), "Clara Fane" (1848), "Memoirs of Mary, the Duchess of Burgundy" (1853), and the biography of Anne of Brittany (1855).

COSTER, Laurens Janszoon, a Dutch typographer of the 15th century, for whom it was claimed that he had invented the art of printing in Haarlem previous to Gutenberg. There are several ancient traditions recorded by writers of the 16th century to prove the truth of this theory, and it has been defended with some ability. It is also stated that he obliged the workmen in his employ under oath not to divulge his secret, but that after his death one of them, Johann Faust, took possession on a Christmas night of all his master's implements and types, and fled to Amsterdam, thence to Cologne, and afterward to Mentz, where he founded a printing establishment. Even according to the accounts of his advocates, Coster seems to have had no idea of the important and far-reaching results of his discovery, nor any regard to the glory attached to it. Nothing is known concerning his pupils, and there is no evidence that his work was continued by his heirs. The documents by which the supporters of Coster attempt to establish his claims are of recent discovery, but his countrymen have made this question one of national importance. A statue, with an inscription commemorative of the invention of printing, was raised at Haarlem in 1622 in his honor, opposite the house which he occupied. The academy of Haarlem having offered a prize for the best vindication of Coster's claim, it was awarded to Koning's *Verhandeling over het oorsprong*, &c., *der boekdrukkunst*, which appeared in Haarlem in 1816, and was translated into French in 1819. A committee appointed by the authorities of Haarlem agreed upon 1423 as the year in which the art of printing had been invented by their townsman, and the 4th jubilee in honor of that event, called the "Coster festival," was celebrated with great pomp on July 11 and 12, 1823. See *Gedenkschriften wegens het vierde eeuw-getijde van de uitvinding der boekdrukkunst* (Haarlem, 1824).

COSTUME (It. *costume*, custom), the style of dress characteristic of an individual, community, class, or age. So various and fickle are the modes of costume, that if the dressed man and not the natural man were the subject of science, and if men and women, like shells, minerals, flowers, and stars, were chiefly described and characterized by the way they strike the eye rather than by more essential qualities, humanity would be the most complicated and perplexing branch of natural history. In an old poem, an English philosopher is represented as standing naked before a piece of cloth, with a pair of scissors in hand, trying in vain to decide in which of the various possible ways he shall clothe himself, and singing to himself:

> Now I will wear this, and now I will wear that,
> And now I will wear I cannot tell what.

Though no thinker has developed *à priori* the laws of costume, an observer of its phenomena in all ages would be able to reduce them to a few original types. There are but 2 places naturally fitted to be the points of support of the principal portions of dress: over the shoulders, and around the body above the hips. When attached by the shoulders, if no openings are made for the arms, or if the sleeves are so full and flowing as not to appear distinct from the principal garment, some one of the varieties of cloak is produced, as the chlamys, toga, peplum, pallium, shawl, cassock, robe, cope, dalmatica, surplice, pelisse, mantle, and mantilla. If the garment is closer, so that the arms project through it and have free play outside of it, some species of the tunic, various in length and quality, is produced, as the coat, waistcoat, frock coat, blouse, jacket, spencer, jerkin, doublet, super-tunic, surtout, gown, bodice, kirtle, chemise, and shirt. Garments attached by the hips are distinguished into 2 classes, according as they envelop the legs separately or together. Of the former class are all the trouse, trousers, breeches, pantaloons, pantalettes, and drawers; of the latter are the skirts or robes of gowns, aprons, and all the petticoats, as jupes, sous-jupes, jupons, kilts, and farthingales. The peculiarities of different classes are often combined in the same garment, the skirt which hangs from the waist being united to a bodice closely fitting the upper part of the body, and the lower garments being often suspended from the shoulders by straps. The coverings for the head, feet, and hands are put on from the extremities, and are kept in place chiefly by being made close, though garters, shoe buckles and strings, and occasionally straps beneath the chin, are employed as fastenings; they include caps, hats, hoods, bonnets, turbans, tiaras, mitres, crowns, chaperons, cauls, cowls, plumes, crests, veils, wimples, sleeves, and having a flounce at the bottom. Under the flowing toga and stola were worn one or often two girdled and close tunics, which were larger and longer for the females. The Romans made their garments chiefly of linen and woollen, silk being unknown to them till after the close of the republic. There were celebrated Coan vestments made of muslin or gauze, so thin as hardly to conceal the form, and which were denominated by the satirists "woven wind." The Romans, like the Greeks, went with head uncovered, or with only a part of the toga drawn over it, except at festivals, on journeys, or in war, when a cap, broad-brimmed hat (*petasus*), or helmet was worn. There were various coverings for the feet, those for the men being usually of black leather, those for the women white, or sometimes red or yellow.—Early in the 14th century fashions began to travel northward from Italy through Paris to London. At that period were introduced caps and hats of various fantastic shapes, plumes, and garments of more delicate texture, and the women began to ornament the borders of their shifts around the bosom and arms with needle-work. The female costume which appears in the paintings of Giotto and his contemporaries is a robe or super-tunic flowing in folds to the feet, and coming high up in the neck, where it was met by the wimple of white linen. The sleeves terminated at the elbow in lappets, showing the sleeve of the under-garment, which fitted the body tightly.—The dress of the ancient Saxon, Norman, Scottish, and Danish women was a long girdled robe, and a full flowing mantle fastened on the breast. Sleeves and veils had become so long in the reign of Henry I. that they were tied up in bows and festoons. Great extravagance in dress prevailed in the reign of Edward III., when the men wore silk hoods, party-colored coats with deep sleeves and narrow waists, short hose, long pointed shoes, a bushy beard before, and a tail of hair behind; and the ladies of distinction wore a turban, or lofty mitre with ribbons floating from it like streamers, a tunic half of one color and half of another, and a deeply embroidered zone, in the front of which 2 daggers were suspended. "The ladies," says a poet of that period, "are like peacocks and magpies." The petticoat is first mentioned by this appellation in the 15th century, when it was worn by both sexes. Coat, or "cote," became a new name for a species of tunic about the same time. The kirtle, which is frequently alluded to in old romances, was the under-garment, white or more usually green, and sometimes laced close to the body like a bodice. Occasionally in Anglo-Norman times ladies "in kirtle alone served in the hall," and at the close of the 15th century it was a habit of penance, and was worn as such by Jane Shore. In the reign of Queen Elizabeth the earl of Pembroke was the first who wore knit stockings in England, which were obtained from Mantua; and the earl of Oxford brought also from Italy embroidered and perfumed gloves. The ladies wore farthingales and ruffs of immense compass, and when the men introduced long swords and high ruffs, the jealous queen appointed officers to break every sword and to clip every gentleman's ruff which was beyond a certain size. The breeches fell far short of the knees, the defect being supplied by long hose. The bodice of a lady's dress was made remarkably long. The fashionable hat had a broad brim and a high crown, diminishing conically upward. In the reign of James I. the cloak was more worn than it had been previously, and it continued to be in fashion after the restoration of Charles II. Silk garters puffed in a large knot were worn below the knees, and knots or roses adorned the shoes. Yellow starch for ruffs, invented by the French, was introduced into England in this reign by the example of a lady who soon after "went to be hanged in a ruff of that color." Long coats were worn by boys till they were about 8 years of age, the present costume of the blue coat boys of London being that of the time when Christ's hospital was founded. After the restoration, the periwig was introduced into England from France, and though preachers inveighed against it in their sermons, it soon became so much the reigning mode that a country gentleman is said to have employed a painter to place periwigs on the heads of several of Vandyke's portraits. In this reign the clerical habit assumed its present form, and it was also the era of shoe buckles, open sleeves, pantaloons, and shoulder knots. The ladies often wore green stockings, patched and painted their faces in imitation of the French, and affected a mean between dress and nakedness which excited the reprehension of ecclesiastics. Pepys's "Diary" gives many minute details of the costume of this period. In the reign of William and Mary, Dryden complains that "our snippers (tailors) go over once a year into France to bring back the newest mode." The coat worn by gentlemen at this period was cut straight before, laced and often buttoned in front, with large cuffs, but no collar. It was often fringed with gold and silver and adorned with tassels. The breeches were close, reaching below the knee, the shirt was ruffled, the shoes were square-toed, and the hats were cocked. The peruke, of French origin, had expanded to an enormous size at the court of Louis XIV., and was copied in England, where it was worn alike by beaux, barristers, and clergy. Thiers, a French ecclesiastic, wrote an elaborate *Histoire des perruques*, which was published at Paris in 1690. Flounces, ruffles, jewels, and frizzled and curled hair distinguished the costume of the ladies. The head dress was a cap and veil, the latter thrown back, which gradually diminished to a caul with 2 lappets, when it was styled a mob. The example of the queen made needle-work fashionable; the borders of the chemise, which was open in the bosom, were ruffled and highly ornamented; and the large tub hoop, resembling the scarlet, and strings of shells. The feathers of the turkey were fastened together by hempen threads and wrought into mantles. The warrior delighted in a collar made of the claws of a grisly bear, in a piece of an enemy's scalp with a tuft of hair painted red as an ornament for his pipe, in the skin of a rattlesnake wound about the arm, and the skin of a polecat bound about the leg. The hair was often decorated with the wing of a bird or the plumage of a raven, and the skin was often tattooed or painted in stripes, or to represent animals, leaves, or flowers.—The colonists of America usually followed the fashions of dress prevalent in the countries from which they came. Thus the military cocked hat began to be worn in New England about 1670, when it was called the Monmouth hat. The width of its brim was about 6 inches, and for convenience it was turned up first on one side only, then on two opposite sides, and finally on three sides, making the three-cornered cocked hats worn by gentlemen in New England from 1782 till the period of the revolution. Periwigs, towering head dresses, trailing skirts, and hooped petticoats were also fashionable for long periods in the colonies. Much of that picturesqueness of costume, which was formerly created by a distinct style of dress for persons of different ranks and occupations, for the nobles, the peasants, the merchants, the manufacturers, the lawyers, clergy, and officers of state, is lost in recent times, in which, though all persons do not dress quite alike, they yet pursue about the same ideal. The Parisian full dress is imitated successfully in polished society, and the imitation is generally apparent in the divergences from it of greater or less extent which are permitted in the various avocations of labor. It is perhaps only the backwoodsmen and lumberers of the frontier states that have a costume entirely without reference to the reigning fashions among people of leisure.—In the costume of all periods and nations, there are a few types, a certain fixedness of a few general forms, and an infinite number of variations. The law which governs these variations has not been developed, and no philosopher has yet occupied himself with showing that the art of dress is also a science. Yet it is probable that costume has relation to ideas, that the taste which determines it is tempered and formed by the spirit of the year and age, and that its elongations and contractions, puffing and lacing, exaggerations, disguises, transferences of elegance and rich adornment from one part of the person to another, and various methods of balancing the proportion between the power above and that below the girdle of the waist, are caused by the same principles which work the changes in church and state.—Costume is an important historical study for the artist, since in recent times the principle has become recognized that its correct representation is essential to historical truth. At the period of the Renaissance, there was a traditional type of costume for ideal figures. It afterward became common to give the prevalent contemporary dress alike to gods, heroes, apostles, and saints; and the painters of the reign of Louis XV. ascribed their own garments to Greek divinities and Arcadian shepherds. David was one of the first who introduced a better taste in painting. In sculpture, there are still adherents to a half-antique, half-ideal costume, though the realistic and historical tendency has been favored by Schadow, Thorwaldsen, Rauch, Rietschel, and David d'Angers. In the middle of the 18th century, Greek heroes and Roman generals appeared upon the stage in long perukes, and in the complete costume of French courtiers. Koch at Berlin began a reform by giving to Götz von Berlichingen in 1775 a historical costume. His example was followed by Schröder, Iffland, Talma, and Brühl, for all pieces whose scene was not wholly fanciful and ideal.—Among the most important works treating of costume are the *Recherches sur les costumes*, by Maillot, (Paris, 1804); the *Collection de costumes, armes, et meubles*, by Viel-Castel (Paris, 1828–'33); the *Moden und Trachten*, by Hauff (Stuttgart, 1840); the *Trachten des christlichen Mittelalters*, by Hefner (Frankfort, 1847 *et seq.*); the *Costüm Kunde*, by Weiss (Stuttgart, 1856 *et seq.*); the "Complete View of the Dress and Habits of the People of England from the Establishment of the Saxons in Britain" (London, 1796–'99); and the very complete work of Ferrario on ancient and modern costumes (2d edition, Florence, 1828–'31).

COSWAY, Richard, an English artist, born at Tiverton in 1740, died in 1821. His chief merit was in the execution of miniatures, in which he had no rival among his contemporaries. His wife, also an artist, and a woman of great accomplishments, was for many years a contributor to the exhibitions of the royal academy.

COTA, Rodriguez de, a Spanish poet of the 15th century, called the elder (or uncle) to distinguish him from his nephew of the same name. He was a native of Toledo, and the supposed author of the first and longest act of the "Celestina," a dramatic story, in 21 acts or parts, originally called the "Tragi-comedy of Calisto and Melibœa." This was an important contribution to the foundation of the Spanish drama, and passed through many editions. Cota's claims to its authorship have been contested, but Alonso de Villegas says, that "though he was poor and of low estate, we know that Cota's skill enabled him to begin the great 'Celestina,' and that Rojas finished it with an ambrosial air that can never be enough valued." He was also supposed to have written the celebrated eclogue, *Mingo-Revulgo*, a spirited satire against the latter part of the reign of Henry IV. of Castile. In the earlier editions of this work he is mentioned as the author, but his claims have been frequently questioned. A "Dialogue between Love and an Old Man" is attributed to the same author.

CÔTE D'OR, an E. department of France, comceeds another marked belt, distinguished by its barren aspect, clothed but with small shrubs and lichens, and this gradually gives place to the forest belt, which extends to the base of the mountain. Nowhere are these divisions so conspicuously marked as in the high mountains of this portion of the Andes. The snowy belt of Cotopaxi is an especial object of admiration. Seen through the pure atmosphere in summer evenings, its color changes according as the rays of the setting sun are reflected from its surface; it appears at one time silvery white and dazzling, and again like a mass of burnished gold. The rocky portions present darker shades, often assuming violet and purple tints of wonderful beauty and magnificence. Out of its summit arises a column of smoke, and occasional discharges like those of bombs are heard, accompanied with emissions of fire, visible at night. The flow of lava is of rare occurrence, as in all the South American volcanoes. The first eruption on record occurred in the year 1533. In 1698 the town of Tacunga, 8 leagues distant toward the S. S. W., was destroyed by the eruption. In 1743 and 1744 flames were seen issuing through innumerable crevices around the crater, and rising from its summit to great heights in the air. The snow on the evening of June 15 was melted, and torrents of water were poured down the sides of the mountain, devastating the country around. Rocks as large as the huts of the Indians are said to have been thrown as far as 9 or 10 m. from the mountain. La Condamine, who for several years previous had been in the vicinity, and in 1738 had made unsuccessful attempts to scale the peak, was a witness to some of these eruptions. The eruption of April, 1768, is reputed to have been the most terrible of all. Showers of ashes and clouds of smoke sent forth from the crater obscured the light of the sun, producing such darkness that the inhabitants of Tacunga and Hambato were obliged to grope their way with lanterns till 3 P. M. The ashes were carried through the air even to Guayaquil, 180 m. distant, and Popayan. A deluge was produced in 1803. During this eruption Humboldt, who was at Guayaquil, heard day and night the explosions of the volcano, which resembled heavy discharges of artillery. From that time the volcano remained tranquil till 1851, when flames again appeared at its summit, and dense clouds of smoke rolled forth from the crater. Small eruptions occurred on its eastern slope. In 1855 a greater eruption took place on the western side, in which lava and burning stones were ejected, and water was poured down the sides of the mountain. In 1856 occurred another on the eastern side, by which the water was driven out of the channel of the Napo.

COTTA, a noble family of Italian origin, settled in Germany since the 15th century. I. Johann Georg in 1640 founded an establishment at Tübingen, which at present is the leading publishing house in Germany. II. Johann Friedrich, born May 12 1701, died Dec. 31, 1779, was an eminent theological writer. His "History of the Christian Church" (3 vols. 1768-'73) was highly esteemed. III. Johann Friedrich, baron von Cottendorf, grandson of the preceding, a man whose name is intimately connected with the rise of modern German literature, born April 27, 1764, at Stuttgart, died Dec. 29, 1832. His father intended him for the pulpit, but his inclinations led him to study law and natural philosophy. In Paris, where he sojourned for some time, he became intimately acquainted with many prominent men of science. Adverse circumstances having brought his father near the verge of bankruptcy, he was prevailed upon to assume the management of the firm. His energy in business, and his superior literary attainments, soon placed him in a prominent position. He became acquainted with Goethe, Schiller, Herder, Fichte, Schelling, Jean Paul, Tieck, Voss, A. W. von Schlegel, Humboldt, and others; and many authors, in whose juvenile effusions Cotta recognized the marks of genius, were introduced by him to the public. In this respect his merits can scarcely be too highly appreciated. He established the *Augsburger Allgemeine Zeitung* (1798), which to this day remains at the head of the daily press of Germany; the *Horen*, a literary magazine, among the contributors of which Schiller was one of the most active; the *Politische Annalen*, the *Morgenblatt*, the *Flora*, the *Ausland*, the *Polytechnisches Journal*, and several other literary and scientific periodicals. During his long and useful life he held many offices of public honor and trust. Of all noblemen in Würtemberg he was the first to abolish servitude on his domains (1820). He was also an active promoter of scientific agriculture, of steam navigation on the lake of Constance and the Rhine (1825-'26), and introduced the first steam press in Germany (1824). IV. Georg, son of the preceding, born in 1796, has continued the publishing business. Though not possessing the great activity and ability of his father, he has at least fairly preserved the reputation of his name, and largely extended the business of the firm, which still remains the foremost in Germany.—Bernhard, born in Saxony, Oct. 24, 1808, is one of the most eminent living German geologists, but not a member of the above family. He wrote *Briefe über Humboldt's Kosmos* and other highly esteemed works.

COTTABUS, a social game, anciently a favorite amusement of young people in Sicily and Greece. The simplest mode of playing it was as follows: A metal basin was produced, into which each person endeavored to cast a certain quantity of wine with his goblet from a certain distance, pronouncing as he threw, either aloud or to himself, the name of his mistress. If all the wine thrown fell in the basin, or if that which fell extracted from the metal a pure and clear sound, then the party concluded that the affections of his sweetheart were all right. But if the wine missed the basin, or if the portion which chanced to fall in it produced only a dull and leaden sound, the unsuccessful per-is found in India, China, Egypt, the United States, &c. It came to this country through the Bahama islands from one of the Caribbean isles, and is supposed to have originated in Persia. The fibre is remarkable for its length, strength, silkiness, and yellowish tinge; the seeds are black. Those who class the tree cotton with the herbaceous, speak of the former as almost unknown as a marketable product, limiting it to a tall tree growing wild in Borneo and other places, and which must be climbed to obtain its downy product.—The cotton plant is cultivated in the southern states from the seed, which is sown by hand in March and April, in rows commonly 4 to 5 feet apart, and in drills 18 inches apart. The soil is preferred light, even if sandy, and is kept well weeded by occasional hoeing or running a light plough or scraper between the rows. By topping, the growth is thrown into the production of the pod; when this has well burst out in the latter part of summer, and a hand can gather 50 lbs. a day, it is picked at intervals by the negroes, the pod being gathered with the cotton, or when fully ripe only the cotton itself with the seed entangled among the fibres. A bale of average weight of marketable cotton to the acre is a large yield. The census returns for 1850 give the following as the average product per acre of cotton and seed in the states named, the seed constituting 50 to 60 per cent. of the whole weight: South Carolina, 320 lbs.; Georgia, 500; Florida, 250; Tennessee, 300; Alabama, 525; Louisiana, 550; Mississippi, 650; Arkansas, 700; Texas, 750. As a general rule, the magnitude of the crop is found to depend upon the length of time between the last frost in spring and the first in autumn. In very dry seasons the production is lessened by the plants being checked in their growth; and in very wet seasons the plants run to leaves, producing very little cotton. The crop is also liable to very serious injury from the ravages of the insects known by the names of cotton worm, boll worm, and army worm or chenille, or cotton caterpillar. The last named appear in the form of a moth in August, which lays its eggs upon the under side of the leaves. In 2 to 5 days according to some authorities, but in a few hours as stated by Dr. Ure, the worms are hatched and commence their ravages upon the plants, sometimes, when nearly grown, destroying the crop over hundreds of acres in a few days. Fires are made through the fields at night to destroy the flies, and the chrysalides into which the worms change are picked and destroyed by the negroes; and corn is scattered in some places to attract birds, that they and the domestic fowls let into the fields may feed also upon the worms. In Louisiana it is stated that but for the ants, which devour the worms, the crop could not be cultivated.—The cotton after being picked was formerly separated from the seeds by hand; a slow process, as one could clean scarcely a pound a day. After the separation of the seeds by the gin, the cotton used to be whipped by a bow, by which the dirt was removed. This gave the name of Georgia bowed cotton to the product.—The use of the fibre of the cotton plant as a material for textile fabrics does not appear to have been known to those nations of antiquity whose skill in the manufacture of fine linen and in the weaving of wool is recorded in the most ancient writings. The cloths in which the mummies of the Egyptians were enveloped exhibit only the round smooth fibre of flax, never the sharp, angular, and spirally twisted fibre peculiar to cotton, a structure which may be recognised in the rags of the stuff made of the material, and is not lost even in the pulp to which these rags are reduced for the purpose of being made into paper. The earliest notice of cotton is by Herodotus, about 450 B. C., who speaks of the trees of India bearing, as their fruit, fleeces more delicate and beautiful than those of sheep, and of the Indians using them for the manufacture of cloth. Aristobulus and Nearchus, generals of Alexander, brought back to Greece correct accounts of the cotton tree and of its product. Theophrastus also described its culture from exact information. From India, cotton cloth was gradually introduced into Greece and Rome, and before the Christian era it was applied by Verres in Sicily as a covering for his tents. According to Livy, Lentulus Spinther (63 B. C.) first introduced cotton awnings in the theatre at the Apollinarian games; and Cæsar afterward covered the forum with them, as also the sacred way from his own house to the Capitoline hill, which appeared more wonderful than the gladiatorial exhibition itself. The cotton fabrics of the Hindoos have been excelled in fineness and excellence only by the productions of the most perfect machines of modern times. With the distaff alone, the Indian spins the yarn with his fingers, by the delicacy of his touch and the moisture communicated from his fingers incorporating the fibres with the greatest nicety and perfection. The only machine he uses in weaving is a rude loom, which he carries about with him, setting it up under a tree, to a branch of which he attaches the balances; a portion of the gear is sunk in a hole in the ground, into which he thrusts his feet, and thus sits and works the treadle, or cords which serve as such, by loops that go around the great toes. Thus were made the fine muslins known to the ancient Greeks by the name of *Gangetikoi*, which referred to their coming from the borders of the Ganges. These were both plain and ornamental, and some were white and some beautifully dyed. The city of Calicut on the western coast, which with Surat was an ancient cotton mart for the supply of the more western nations of Asia, gave its name to the variety of the fabric known as calico. As described by Tavernier, some qualities of this were "so fine that you could hardly feel them in your hand, and the thread when spun is scarcely discernible." He also speaks of the cloth making transparent garments, and of turbans containing 25 or 30 ells of it weighing less than 4 ounces. A single pound of thread was spun out to the length of 115 miles; but it has since been made in England, as was seen at the great exhibition, so fine, that a pound would have reached 1,026 miles. The famous muslins of Decca, made of a staple too short to be spun by Europeans or woven by any machinery, and designated as "webs of woven wind," are produced from cotton grown only in a district of about 40 miles in length by 3 in breadth, lying to the N. E. of Calcutta. The late Rev. William Ward, missionary at Serampore, speaks of muslins made in Bengal so fine that a piece requires 4 months to make it, and is worth 500 rupees; when laid upon the grass and covered with dew, it is not discernible.—Hindostan still continues to produce large quantities of cotton, the several species of the herbaceous, shrubby, and arborescent plant being met with, either wild or cultivated, in different portions of the territory between Cape Comorin and the Himalaya mountains. The annual product is roughly estimated at about 450,000,000 pounds, of which two-thirds are consumed by the natives, and the remainder is exported in about equal quantities to Great Britain and China. The exportations are principally from the districts within 40 miles of the coast, those of Malabar and Coromandel furnishing the best qualities. But although great pains have been taken by the East India company to improve the culture, and seed from other countries and methods in use in the United States have been introduced at great expense, the product has not been made to equal in quality the long staple obtained in America, and, from some peculiarity common to all of it under whatever condition it is raised, is never likely to be substituted to a great extent for American cotton; nor has the quantity been sensibly increased, a fact owing in part to the sluggishness of the people and the impossibility of transporting the cotton from far within the interior. Burmah also produces a considerable amount of cotton, and its exportations to China, together with those of British India, are estimated to be about 40,000 bales of 400 lbs. each. Though the Chinese consume immense quantities of cotton, its use and cultivation do not appear to have been known to them previous to the 11th century, and their own crop still falls far short of supplying their wants. The best known of their fabrics are the nankeens, named from the city of Nankin. Ceylon, Borneo, and other islands of the Indian archipelago, have long produced cotton, and are susceptible of a largely increased culture of it. Japan produces it, but the fibre is found to be too coarse for the manufacture of fine fabrics. Australia is found in portions of its territory well adapted for the growth of the plant; but no country either of the old or new world is probably to be compared with Africa for the adaptation of its soil and climate to this cultivation. In the central portions of the continent the product has been employed from remote periods; and it has long been known upon the coast of Guinea, in Abyssinia, and upon the banks of the Senegal, Gambia, Niger, &c., &c. The distinguished traveller Dr. Livingstone has recently furnished much information respecting the capacity of this region to produce cotton. He found the plant flourishing prolifically in the country of Angola, and the women employed in spinning the cotton "with a spindle and distaff exactly like those which were in use among the ancient Egyptians." The American cotton plant, he thinks, has there become perennial; and he speaks of it as being cleared off as a nuisance to make room for the cultivation of vegetables for food. Dr. Livingstone returned to this region in March, 1858, prepared to prosecute the culture of the crop. Mr. Thomas Clegg has been engaged in the region of Sierra Leone since the year 1852 in encouraging the natives to raise the crop, and, being provided with gins and other apparatus, has so far succeeded that his shipments to Manchester have been as follows: in 1852, 1,810 lbs.; 1853, 4,617; 1854, [illegible]; 1855, 1,651; 1856, 11,492; 1857, 35,419; 1858 to April 15, 96,470. The total produce of 1857 was 75,419 lbs., about 40,000 having been destroyed by fire before shipping. Much more cotton also was offered at ½d. per lb. in the seed, 4 such lbs. making one of clean cotton. All the African cotton, he reports, fetches in the Liverpool market from 2*d.* to 3*d.* more than East India cotton in the same condition, and that it is next in quality to American cotton. In the Yoruba country, situated in the interior, he is advised of cotton being raised by the natives in large quantities and offered for sale on market days (every 4th) to the amount of 1,000 to 2,000 bags of 75 to 80 lbs. each. So much importance is attached to these accounts in England that Lord Palmerston on July 12, 1858, expressed in the house of commons his opinion that in a few years the western coast of Africa would furnish from its cotton districts, more extensive than those of India, a more important commerce in this article than is had with any other portion of the world, the United States alone excepted. In 1821 the culture of cotton was introduced into Egypt, where it has since been successfully prosecuted and greatly extended, so that England now draws thence a portion of its supplies, and of a quality only inferior to the sea island cotton of the United States; the quantity, however, is very uncertain, the fluctuations being extreme and beyond calculation. Spain was the first of European countries to adopt the cotton culture; it was introduced there as early as the 10th century by the Moors; it was about the same time extended to Sicily. The Venetians engaged in it about the 14th century; and the Turks about the same period introduced it into Roumelia and Macedonia. The first notice of the English devoting their attention to the manufacture of the product is found in the "Treasury of Traffic" of Lewis Roberts, 1641, in which mention is made of the industry of the Manchester manufacturers, who, among other operations specified, "buy cotton wool in London that comes first from Cyprus and Smyrna, and at home worke the same and perfect it into fustians, vermillions, dimities, and other stuffes." In the early part of the 18th century the English received it from the East and West Indies.—In the new world, the manufacture of cotton cloth appears to have been well understood by the Mexicans and Peruvians long before the discovery of their countries by Europeans. Columbus found the cotton plant growing wild in Hispaniola, and later explorers recognized it as far north as the country bordering the Meschachebe, or Mississippi, and its tributaries. Cortes, on setting out from Trinidad on the southern coast of Cuba for his Mexican expedition, gathered it in abundance to quilt the jackets of his soldiers as a protection, after the practice of the natives, against the Indian arrows; and when on the Mexican coast, among the rich presents received by him from Montezuma were "curtains, coverlets, and robes of cotton, fine as silk, of rich and various dyes, interwoven with feather work, that rivalled the delicacy of painting." The Mexicans also fabricated white cotton cloths for numerous uses, and even converted the material into a sort of paper. The West India islands furnished to Great Britain about the close of the last century some 40,000 bales, or ⅔ of the supply of cotton at that time. The quality was the long staple. The culture has since given place in great measure to that of sugar. In Brazil the crop of the valuable long staple cotton has proved much more important, and the export of cotton from this country in the early part of the present century often exceeded that of any other excepting the United States. Of late years it has, however, gradually declined, and the expenses of transportation from the interior are likely to prevent any considerable increase of its culture. In the United States, cotton seed, as stated in Purchas's "Pilgrims," were first "planted as an experiment in 1621, and their plentiful coming up was, at that early day, a subject of interest in America and England." In the province of Carolina the growth of the cotton plant is noticed in a paper of the date of 1666 preserved in Carroll's "Historical Collections of South Carolina." In 1736, the plant was known in gardens in lat. 39° N., on the eastern shore of Maryland; and about 40 years afterward it was cultivated in the county of Cape May in New Jersey. It was, however, little known except as a garden plant until after the revolutionary war. At the commencement of this, Gen. Delagall is said to have had 30 acres of the green seed cotton under culture near Savannah; and in 1748 it is stated that among the exports of Charleston, S. C., were 7 bags of cotton wool, valued at £3 11*s.* 5*d.* a bag. Another small shipment was made in 1754; and in 1770 three more, amounting to 10 bales, were made to Liverpool. In 1784 (De Bow, vol. i. p. 119) 8 bags shipped to England were seized, on the ground that so much cotton could not be produced in the United States. The exports of the next 6 years were successively, 14 bags; 6 do.; 109 do.; 389 do.; 842 do.; and in 1790, 81 bags.[*] In 1786 the first sea island cotton was raised on the coast of Georgia, and its exportation was commenced in 1788 by Alexander Bissel, of St. Simon's island. The seeds were obtained from the Bahamas, the plant having been introduced there from Anguilla, one of the Leeward isles. It is of the arborescent kind, and limited in its range to a narrow belt along the coast of South Carolina, south of the Santee river, and to the low sandy islands near the mouth of the Savannah river. The first successful crop in the state was that of William Elliott in 1790, on an island called Hilton Head. The excellent quality of the staple caused it to be distinguished from other cottons in the year 1805, and enabled it to command much higher prices. In 1806 it sold for 30 cts. per lb., when other cotton was worth 22 cts. In 1816 it brought 47 cts.; other cotton 27 cts. The great length of the fibre was unequalled, and the English manufacturers at first actually reduced it by cutting before spinning. The success of the crop caused many to engage in its cultivation, and some of the largest fortunes in South Carolina were thus rapidly accumulated. The production of the region adapted to it was, however, limited, and the amount raised in 1805 was not exceeded by the crop of 1832, being about 8,000,000 lbs. Of late years the profits have been greatly reduced, and the crop has materially fallen off. In 1805 Kinsey Burden, of St. John's, Colleton district, S. C., by careful selection of seed produced cotton worth 25 cts. per lb. more than that of any of his neighbors; and the secret of his superior success was not discovered for 20 years afterward. In 1826 his crop of 60 bags brought in market the great price of $1.10 per lb., and that of the following year $1.25. In 1828, 2 bags were sold at the rate of $2 per lb.—the highest price ever known to have been paid for merchantable cotton. In 1857 a bale was sent from Edisto, S. C., supposed to be the finest that ever crossed the Atlantic, which sold for $1.85 per lb. It was thought to be superior to that which made the famous yarn of No. 900 (noticed below), which attracted much attention in the great exhibition of 1851. The culture of the other varieties, the herbaceous and the hirsutum or shrub cotton, distinguished by their green instead of the black seed of the sea island, was rapidly extended in the last 10 years of the 18th century throughout the southern states, the product being known as the short staple or upland cotton. In 1790 England received only 1 bag of United States cotton in 1,000 bags imported; in 1792, 1 in 126; in 1795, 1 in 25; and in 1799, about ¼ of the importation was from this country. The production and export of the United States in periods of 5 years, from the year 1801 to 1830, inclusive, are exhibited in the following table; and the annual production and export of subsequent years. Tables of this nature vary somewhat as prepared by different authorities, being often calculated from bales which are of indefinite weight, and with the year sometimes reckoned, as in this country, from Sept. 1, and in others, as in Great Britain, from Jan. 1 succeeding, or, as in the U. S. treasury reports, to June 30. In some also the amount of cotton consumed in the interior is noticed, and in others not. The tables, therefore, at the best, are approximate only. The annual crop, from the year 1830, is to the month of September of the successive years, the figures being those furnished by the "New York Shipping and Commercial List." Assuming the average weight of the bale to be 440 lbs., multiplying by this number would give the number of pounds. The figures do not include the quantities consumed in the interior, which may amount of late years to from 100,000 to 120,000 bales. The crop of sea island cotton for 1857–'8 (included in the general statement) was as follows: Florida, 25,685 bales; Georgia, 8,240; and South Carolina, 16,569—total, 50,494 bales, against 45,814 in 1856–'7; 44,512 in 1855–'6; 40,841 in 1854–'5; and 39,686 in 1853–'4. The following table presents the quantities of cotton exported from the United States to the principal commercial countries for the years named; and the succeeding table the shipments from the southern ports for the year, Sept. 1, 1857, to Aug. 31, 1858:

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[*] These statements, originally presented by the Hon. Whitmarsh Seabrook, are directly contradictory of McCulloch's statement, that no cotton was exported from the United States previous to 1790, and it is a question whether the cotton may not have been from the West India islands, brought first to this country, and shipped from our ports. The "Encyclopædia Brittanica," vol. vii. p. 447, in note, gives incorrectly the date of the seizure of the 8 bales in Liverpool as 1764. The "Southern Review" for May, 1831, confirms the date given in the text. See also Smither's "History of Liverpool," pp. 129, 132.

Years.	Crop, lbs.	Consumption in the U.S., N. of Virginia, bales.	Consumption elsewhere, bales.	Export, lbs.	Value of Exports.	Av. price per lb., cts.
1801–1805	298,000,000	....	....	166,000,000	[illegible]	[illegible]
1806–1810	402,000,000	....	....	261,000,000	47,000,000	[illegible]
1811–1815	400,000,000	....	....	210,000,000	[illegible]	[illegible]
1816–1820	706,000,000	....	....	453,000,000	120,000,000	[illegible]
1821–1825	1,045,000,000	....	....	762,181,380	[illegible]	[illegible]
1826–1830	1,560,000,000	455,441	....	1,272,772,281	[illegible]	[illegible]
	Bales.					
1830–1831	1,038,848	182,142	....	276,979,784	25,289,492	9.1
1831–1832	987,477	173,800	....	322,215,122	31,724,682	9.8
1832–1833	1,070,438	194,412	....	324,698,604	36,191,105	11.1
1833–1834	1,205,394	196,413	....	384,717,907	49,448,402	12.8
1834–1835	1,254,328	216,888	....	387,358,992	64,961,302	16.8
1835–1836	1,360,725	236,733	....	423,631,307	71,284,925	16.8
1836–1837	1,422,930	222,540	....	444,211,537	63,240,102	14.2
1837–1838	1,801,497	246,063	....	595,952,297	61,556,811	10.3
1838–1839	1,360,532	276,018	....	413,624,212	61,238,982	14.8
1839–1840	2,177,835	295,193	....	743,941,061	63,870,307	8.5
1840–1841	1,634,945	297,288	....	530,204,100	54,330,341	10.2
1841–1842	1,683,574	267,850	....	584,717,017	47,593,464	8.1
1842–1843	2,378,875	325,129	....	792,297,106	49,119,806	6.2
1843–1844	2,030,409	346,744	....	663,633,455	54,063,501	8.1
1844–1845	2,394,503	389,006	....	872,905,996	51,739,643	5.92
1845–1846	2,100,537	422,597	....	547,558,055	42,767,341	7.81
1846–1847	1,778,651	427,967	....	527,219,958	53,415,848	10.34
1847–1848	2,347,634	523,892	92,152	814,274,431	61,998,294	7.61
1848–1849	2,728,596	504,148	138,342	1,026,602,269	66,396,967	6.4
1849–1850	2,096,706	476,486	137,012	635,381,604	71,984,616	[illegible]*
1850–1851	2,355,257	386,429	99,185	927,237,089	112,315,317	[illegible]*
1851–1852	3,015,029	588,322	111,281	1,093,230,639	87,965,732	[illegible]*
1852–1853	3,262,882	650,393	153,332	1,111,570,370	109,456,404	[illegible]*
1853–1854	2,930,027	592,284	144,952	987,833,106	93,596,220	[illegible]*
1854–1855	2,847,339	571,117	135,295	1,008,424,701	88,143,844	[illegible]*
1855–1856	3,527,845	633,027	137,712	1,351,431,701	128,382,351	[illegible]*
1856–1857	2,939,520	665,718	154,218	1,048,282,475	131,575,859	[illegible]*
1857–1858	3,113,962	452,185	148,377	....	....	...

* Prices of middling at New Orleans.

Countries.	1851, lbs.	1852, lbs.	1853, lbs.	1854, lbs.	1855, lbs.	1856, lbs.	1857, lbs.
Great Britain	670,645,122	752,573,780	768,596,498	696,247,047	678,499,959	[illegible]	[illegible]
France	139,164,571	186,214,270	189,226,913	144,428,360	210,119,969	221,767,611	[illegible]
Spain	34,272,625	29,301,928	36,851,042	25,024,074	28,071,795	[illegible]	[illegible]
Hanse Towns	16,716,571	22,138,228	22,671,782	37,719,922	30,809,991	[illegible]	[illegible]
Belgium	16,835,018	27,157,890	15,494,442	13,960,460	12,219,558	[illegible]	[illegible]
Austria	17,309,154	23,948,434	17,968,642	14,961,144	9,761,465	[illegible]	[illegible]
Italy	10,820,406	17,984,268	17,487,984	12,725,830	16,087,064	[illegible]	[illegible]
Russia	10,098,448	10,475,168	21,286,563	2,914,954	448,997	[illegible]	[illegible]
Mexico	845,960	6,700,091	7,463,851	12,146,080	7,297,079	[illegible]	[illegible]
Holland	5,508,670	10,259,042	7,088,994	6,048,165	4,941,414	[illegible]	[illegible]
Sweden and Norway	5,160,974	5,939,025	6,099,517	9,212,710	5,499,437	[illegible]	[illegible]
British N. A. Possessions	23,525	16,582	12,295	72,790	[illegible]	[illegible]	[illegible]
Denmark	....	37,042	435,169	82,983	309,156	[illegible]	[illegible]
Cuba	113,572	294,853	196,892	250,633	9,020	[illegible]	[illegible]
Portugal	....	98,285	87,691	121,059	144,096	[illegible]	[illegible]
Elsewhere	722,573	141,808	652,595	1,946,895	270,822	[illegible]	[illegible]
To all countries	927,237,089	1,093,230,639	1,111,570,370	987,833,106	1,008,424,701	1,351,431,701	[illegible]

Export to Foreign Ports (Bales),

From September 1, 1857, *to August* 31, 1858.

From	To Great Britain.	To France.	To N. of Europe.	Other F'n p'ts.	Total.
New Orleans...	1,016,716	236,596	116,204	125,454	1,495,070
Mobile	265,464	89,887	21,468	10,219	387,038
Texas	33,933	1,689	14,716	....	50,338
Florida	25,771	....	....	....	25,771
Savannah	149,346	7,376	7,680	3,300	167,702
Charleston	192,251	35,503	38,126	33,524	299,404
North Carolina.	....	....	....	....	....
Virginia	495	....	....	....	495
Baltimore	164	....	....	....	164
Philadelphia ...	995	....	....	....	995
New York	110,721	12,951	20,308	3,841	147,881
Boston	14,110	....	1,549	4	15,663
Grand total	1,809,966	384,002	215,145	181,343	2,590,455
Preceding year.	1,428,870	413,357	245,798	164,633	2,252,657
Increase	381,096	....	....	16,710	337,798
Decrease.......	....	29,355	30,653	....	....

The quantity absorbed by the home market in 1856 was only about one-fifth of the entire crop —770,739 bales of 400 lbs. each, or 308,295,600 lbs. This amount, worth about $30,000,000, was by a moderate estimate made to produce about 5 times this sum by the industry applied to its manufacture in the New England factories. The dependence of the British manufacturers upon the crop of this country, though it has without doubt been a great blessing to the two nations by giving to each a distinct share of the same important interest, has nevertheless been a matter of great solicitude to them, particularly in view of our own increasing manufactures. The writer of the article "Cotton Manufacture" in the "Encyclopædia Britannica," after enumerating the advantages to Great Britain consequent upon the spread of this branch of industry—how, by the introduction of machinery, cotton fabrics, instead of being brought at great cost from India, were manufactured at home, the population and consumption of the country ceased to be stationary, wages rose in every description of employment, and the demand for agricultural produce increased, so that England became an importer instead of an exporter of grain—discusses the means of preserving their preëminence in the manufacture in these words: "From the European states we have little to fear, and the advantages which America possesses as a cotton-producing country, are greatly neutralized by the other drawbacks to which it is subject. The southern states of the union, in which the cotton wool is raised, from their local defects, and the character of the lower classes, can never become a manufacturing country. To the northern states and to ourselves the difference of cost of raw material cannot be great, particularly if the East Indies and South America be open for our supply. The high price of labor also renders the cost of production much dearer than in Britain, and operates as a serious bar to the extension of the cotton manufacture in the northern states. The consequence is that, notwithstanding the great efforts which have been made to naturalize that branch of industry in these provinces, and notwithstanding the well-known energy and intelligence of the people of North America, it has made but slow progress during the last 20 years, compared with the vast expansion which it has undergone in this country, as will be seen from the following table. [The table is comprised in the two columns of growth and consumption in the first table above.] It is obvious from this table, that the home consumption in the United States has always borne a most disproportioned ratio to the entire growth, and that even in the few last years, when it had attained to the highest point which it has yet reached, the quantity reserved for domestic use has only become a 5th part of the whole, and generally fell below it."—The supplies furnished to commerce by other countries of the world are set forth in great part by the following table of importations into England in the years named, furnished by the same article above quoted from; the quantity is stated in packages, each package containing 300 lbs.:

Years.	American.	Brazil.	E. India.	Egyptian.	W. India, &c.	Packages, total.
1820....	302,395	180,086	57,923	....	31,247	571,651
1830....	618,527	191,468	35,019	14,750	11,721	871,487
1840....	1,237,500	85,300	216,400	38,000	22,300	1,599,500
1845....	1,499,600	110,200	155,100	82,000	8,800	1,855,700
1846....	932,000	84,000	49,500	59,600	9,000	1,134,100
1847....	874,100	110,200	222,800	20,700	4,900	1,232,700
1848....	1,375,400	100,200	227,500	29,000	7,900	1,740,000
1849....	1,477,900	163,800	182,200	72,600	9,100	1,905,400
1850....	1,184,200	171,800	307,900	79,700	5,700	1,749,300
1851....	1,393,700	108,700	328,800	67,400	4,900	1,903,500
1852....	1,789,100	144,200	221,500	189,900	12,600	2,357,300
1853....	1,532,000	132,400	485,300	105,400	9,100	2,264,200

The London "Economist," after tracing the progress of the trade from 1838 to 1850, arrives at the following conclusions: That the supply of cotton from other sources than the United States has been irregularly decreasing; that (including the United States) the supply from all quarters available for home consumption has of late years been falling off at the rate of 1,000 bales a week, while the consumption has been increasing during the same period at the rate of 3,600 bales a week; that in the United States alone the growth is increasing, but limited there to about the same ratio as the increase of slaves, viz., 3 per cent. per annum; that this is barely sufficient to supply the increasing demand for its own consumption and for the continent of Europe; and that consequently, if this branch of industry is to increase at all on its present footing in Great Britain, it must be by applying a great stimulus to the growth of cotton in other countries adapted for the culture. The incapacity of other regions to supply the demand being shown, the writer looks to the British West India islands, and the African and Australian colonies, as most likely to make up the deficiency under encouragement from the British government. Mr. Ellison, in the work already referred to, observes that the share received by Great Britain of the American crop has been gradually diminishing, while that of the United States and of the countries in the north of Europe has been increasing. The demand for manufactured goods throughout the world is also largely increasing. In the 4 years ending 1841, Great Britain received 58 per cent. of the crop of the United States; in the 4 years ending 1853, 54 per cent.; and in the 4 years ending 1857, 51 per cent. The East Indies, but more especially the western coast of Africa, are looked to to supply the deficiency to the English manufacturers. The encouragement of the culture wherever there is a prospect of its succeeding has become so important an object, that an association called the "Cotton Supply Association" has been organized, and had its first annual meeting in Manchester, April 9, 1858. It is engaged in gathering and distributing information respecting the capacity of various districts, and furnishing the best seed, tools, and other implements wherever they are likely to be advantageously employed. Through the aid of the government and the East India company, they also seek to effect various improvements designed to facilitate the development of the resources of the cotton-growing regions.—The distribution of the cotton raised throughout the world, so far as can be ascertained, is presented in the following table, prepared by Mr. J. B. Gribble, of New Orleans:

Countries.	1848–'9.	1849–'50.	1850–'51.	1851–'2.	1852–'3.	1853–'4.	1854–'5.	1855–'6.	1856–'7.
Great Britain	1,586,300	1,513,000	1,661,400	1,896,000	1,835,000	1,967,800	2,097,000	2,140,800	2,100,000
United States	518,000	487,800	404,000	603,000	671,000	610,600	588,600	652,700	702,140
France	400,000	369,300	382,500	476,650	459,650	422,850	457,700	517,000	
Russia	131,200	125,200	122,650	141,950	166,350	88,300	67,550	220,000	
Hamburg and Bremen	125,000	70,700	107,600	127,550	142,650	197,800	195,550	245,200	
Trieste and Austria	134,800	125,200	115,250	126,300	102,000	95,400	88,450	96,700	1,367,000
Holland and Belgium	138,500	71,700	72,250	145,700	183,800	160,650	121,750	171,550	
Spain	75,400	80,400	96,050	94,550	91,600	97,050	113,600	116,100	
Italy, Sweden, &c.	73,750	52,100	60,500	68,900	90,850	87,650	115,450	156,000	
Total	3,182,950	2,895,400	3,022,200	3,680,600	3,712,900	3,727,800	3,882,650	4,288,250	4,150,000

Mr. Gribble, assuming the average weight of packages of raw cotton to be, from the West Indies 173 lbs., Brazil 181, Egypt 306, East Indies 385, and the United States 440, then reducing all to bales of 400 lbs. each, arrives at this result: The product of the West Indies would be for the year 1856, 4,090 bales; Brazil, 5,500; Egypt, 86,445; East Indies, 445,637; and for the United States, 3,880,580, or nearly ⅞ of the product of the world.—All the countries in the world, however productive they might be in the growth of cotton, could never have prepared for use such immense quantities by the methods of cleaning the article known as late as 1793. In that year, Eli Whitney, originally of Massachusetts, and afterward a citizen of New Haven, Conn., by his invention of the saw gin increased the facility of cleaning the short-staple cotton to such a degree, that an extraordinary impetus was given to its culture. Cotton that required a hand a day to clean a pound was better prepared for market by his machine at the rate of 3 cwt. a day. The cotton is seized by rows of teeth formed of strong wires projecting from a roller, or by teeth like those of a saw made upon circular plates of iron. These pass between grate bars set so closely together that the seed cannot pass through, but the cotton is drawn in and afterward swept off by a cylindrical brush. The importance of this invention is well described in the charge of Judge Johnson in a suit brought by Whitney, in Savannah, in 1807, to sustain the validity of his patent. He states: "The green seed is a species much more productive than the black, and by nature adapted to a much greater variety of climate. But by reason of the strong adherence of the fibre to the seed, without the aid of some more powerful machine for separating it than any formerly known among us, the cultivation of it would never have been made an object. The machine of which Mr. Whitney claims the invention so facilitates the preparation of this species for use, that the cultivation of it has suddenly become an object of infinitely greater national importance than that of the other species ever can be. .... With regard to the utility of this discovery, ... the whole interior of the southern states was languishing, and its inhabitants emigrating for want of some object to engage their attention and employ their industry, when the invention of this machine at once opened views to them which set the whole country in active motion. From childhood to age it has presented to us a lucrative employment. Individuals who were depressed with poverty, and sunk in idleness, have suddenly risen to wealth and respectability. Our debts have been paid off, our capitals have increased, and our lands trebled themselves in value. We cannot express the weight of the obligation which the country owes to this invention. The extent of it cannot now be seen," &c., &c. (See "Memoir of the Life of Eli Whitney," by Prof. Olmsted, "American Journal of Science," vol. xxi.) The sea island cotton could not be cleaned by this machine on account of the length and delicacy of its fibre; and the want of some cheap method of preparing it has no doubt greatly restricted its cultivation of late years, which is said not to extend beyond a yearly production of 50,000 bags, of 300 lbs. each, though much territory suited to its growth remains uncultivated. A recent invention of Mr. L. S. Chichester, of New York, is stated to accomplish the important object. The cotton is passed between two rollers, one fluted, made of polished steel 1¼ inches in diameter, the other of vulcanized rubber, 3 inches in diameter: and a plate of iron vibrating in front of the rollers toward and from them rips out the seeds, while the cotton is drawn through. It is stated to clean 300 lbs. a day without crushing a seed. The cotton when cleaned is compressed by powerful screws or hydraulic presses into bags or bales, and secured by ropes or iron hoops. Before shipping, they are sometimes further pressed by steam power. The bale, though commonly rated at 400 lbs. for the short staple and 300 lbs. for the sea island, is a very indefinite measure, as is seen from the following statement of the average weight and bulk of the bales received in Liverpool in 1856:

	Av. wt., lbs.	Cub. ft.		Av wt., lbs.	Cub. ft.
Mobile	504	33	East Indian	388	15
New Orleans	455	32	Egyptian	245	27
Upland	390	22	West Indian	212	25
Sea Island	333	35	Brazilian	188	17

The East Indian bales are seen by this to be much more compressed than any of the others.

COTTON MANUFACTURE. The old method of spinning cotton into thread was to attach a bunch of the carded fibre to the end of a forked stick called a distaff, which was held under the left arm; with the right forefinger and thumb, the cotton was drawn out and twisted, the size and quality of the yarn being regulated only by the delicacy of the touch as this was passed through the fingers. The thread was wound upon a stick called a spindle, as often as sufficient length was twisted for this to reach the ground. Such was the practice of the "spinsters" of old England up to the time of Henry VIII., when the spinning wheel was introduced which had long been in use in India. In this the spindle was made itself to give the twist as it also wound up the thread, being made to revolve rapidly as with the right hand a large wheel was sent round, that carried by a cord or belt the spindle with greatly increased velocity. To a projecting hook at the end of this the thread was attached, and passed thence to the bunch of cotton held upon the distaff in the left hand of the operative. These simple machines, long gone out of use in manufacturing districts, are still to be seen in the interior of the southern states, busily twirling in the houses of the small planters, and producing, in spite of the greater cheapness of manufactured articles, domestic yarns of cotton, flax, and wool. The irregularity of the cotton threads made by the old method limited their use to the woof only of fabrics, the warp being made of linen threads; but even then it was difficult for the weavers to procure the supplies they required of the families in their vicinity that spun for them. The demand for yarns in the English cotton-spinning districts stimulated a workman named James Hargreaves to the invention, in 1767, of the spinning jenny, in which 8 spindles at first were set in a frame and made to spin as many threads at one operation; the ends passing from the spindles through a fluted wooden clasp, which was held in the left hand, and could be made to close upon the threads and hold them fast, as it was moved to and from the spindles. The name of the machine is said to be from gin, a contraction of engine. The number of spindles was afterward increased to 80. Hargreaves, driven from his home by the other spinners, built a small mill at Nottingham to spin yarns by his machines. Richard Arkwright came soon after to the same place with a new invention of spinning by rollers, the effect of which was to draw out the slivers or rolls, as they came from the carding machines, and by the slight pull elongate and straighten the fibres left crooked or doubled in the carding. By bringing together to the rollers from the cards 8 of the fleeces or card ends, and passing these through together and causing them to unite into one sliver, elongating this at the same time to 8 times the original length, a fleecy ribbon is obtained of great uniformity, which quality is still further increased by uniting 4 of these into one, and repeating the process by drawing them out to 4 times the original length. This improvement, and the others introduced by Arkwright in the carding machines, enabled him to produce an even and firm thread, suitable as well for the warp as the woof. With others he built the first mill in which the machinery was run by a water wheel. The machinery was hence known as the water frame, and the yarn as water twist. For the finest threads the doubling of the fibres was many times repeated. To strengthen the loose open cord before spinning, Arkwright caused the cylindrical can into which the sliver coiled itself to revolve upon a pivot during this process; and thus the sliver was changed into an incipient thread called roving, which was either wound upon a bobbin as it was received in the can, or was afterward wound off as a separate process. By the ingenuity of these 2 inventors an immense impulse was given to the fabrication of cotton cloth in England, and factories were rapidly established throughout the country. In 1782, Arkwright had about 5,000 persons employed in his mills, and by the sale of his patents was rapidly acquiring a great fortune. In 1779 the invention of a machine was completed by Samuel Crompton of Bolton, which combined the jenny of Hargreaves with the roller spinning of Arkwright, and was called the mule, or mule jenny. The spindles in this were attached to a carriage or mule, which was run out on wheels about 5 feet, drawing out and stretching the roving as it was twisted at the same time into thread. As the mule was run back the spun threads were wound on the spindles, the processes of spinning and winding thus alternating. The original machines were designed for only 20 or 30 spindles; but as afterward enlarged they carried 2,200 spindles each, all of which were kept in operation by one attendant. This statement alone exhibits the enormous advance made upon the best method in use previous to these inventions, when a spinner with his wheel managed but one spindle. At the present time it is estimated that there are 40,000,000 spindles in use throughout the world for spinning cotton alone, of which more than 21,000,000 are employed in Great Britain, 6,000,000 in the United States, and 5,500,000 in France. Single mills contain as many as 15,000 spindles, and from 300 to 400 looms for weaving. The demand for cotton produced by this increas-

1,700 spindles, and furnished it with looms also for weaving. This factory, still in operation, was probably the first in the world that combined all the processes necessary for converting the raw cotton into finished cloth. The first cotton mill in Lowell was erected in 1822. Thirty years afterward 12 manufacturing companies were in operation there, whose mills, amounting to 51 in number, extended in a continuous line of about a mile from the Merrimack to the Pawtucket falls, and gave employment to 12,688 operatives.* Though but a small portion of the cotton crop was received in New England, the northern states derived more benefit from it, as shown by increased wealth and population, than the whole crop afforded to the states in which it was raised. The commerce growing out of the crop also supported large fleets of ships, which were owned principally in the northern states and in Europe. Thus has this product served to link together the interests of different sections, and becoming in this period of its paramount importance a bond of union between states and nations, it has been of greater benefit to mankind than can be computed by any estimates of the financial prosperity it has created. Other interests may arise to lessen its relative importance, but in the history of the first half at least of the 19th century, cotton will ever be referred to as the principal agent in extending the growth and prosperity of England and America. The following table presents the progress made in the New England states in this manufacture up to the years 1840 and 1850:

States.	Spindles, 1840.	Spindles, 1850.	Looms.	Mills.
Maine	29,736	118,900	3,439	15
New Hampshire	195,173	440,401	12,482	40
Massachusetts	665,095	1,233,091	32,655	165
Vermont	7,254	81,736	845	12
Rhode Island	518,817	624,138	28,283	166
Connecticut	181,319	252,812	6,506	109
Total	1,597,394	2,751,078	83,640	507

During this time the manufacture had also extended in the cotton-producing and the western states, as appears from the following table compiled from the census of 1850, and the "Shipping List" of 1851, which, however, can be regarded as approximative only to a correct statement:

States.	Spindles, 1850.	Spindles, 1851.
North Carolina	47,934	....
South Carolina	16,855	36,500
Georgia	42,589	51,400
Alabama	1,503	12,580
Tennessee	16,813	12,580
Ohio, Pittsburg, Penn., Virginia, Indiana, Kentucky, and Illinois	32,121	100,000
Total	157,814	236,480
Cotton consumed, bales		60,000

In 1850 the consumption of bales was estimated at 107,500. The actual quantity consumed cannot be correctly stated. The number corresponding to the capacity of the spindles, allowing North Carolina 50,000, should be, at the rate of 4,500 bales to 10,000 spindles, about 129,000 bales.—The operations of preparing cotton for the loom are too numerous and complicated to admit of more than a very general description. As the bags or bales are opened at the mills, the first process is to mix thoroughly the cotton of the same staple and general qualities, that the result may be of perfectly uniform character. This is sometimes done in the following manner: The contents of a bale are spread uniformly over a space upon the floor prepared for it, and upon the layer thus made another bale is emptied and spread, and upon this another, and so on, the whole being continually trodden down by men and boys. The pile thus made is called a bing, and as the cotton is required for the mill it is raked down from the top to the bottom on one side of the pile, thus securing a mixture of the contents of all the bales. The mixing should be made with reference to the kind of yarn required, whether for warp or weft, coarse or fine, &c., and the sorting of the cotton for this purpose requires experience and good judgment. Some cottons, particularly those of long and short fibres, cannot be made to draw, rove, or spin well together. The cotton taken from the bing is too impure for spinning until it has been passed through several processes, by which the dirt is winnowed out and the matted lumps are opened and the fibres loosened and cleaned. Different methods are employed to effect this result, according to the quality of the fibre. The finest, which are intended for the most delicate yarns and laces, are beaten by hand upon a frame with twigs; the surface of the frame is a sort of network through which the dust and impurities fall. The cotton, thus beaten or batted, is called batting. Other qualities are passed through a hollow conical machine called a willow, or machines with other names that answer the same purpose, in which the cotton is pulled about and shaken by the action of spikes upon a revolving axis, the dust and impurities as they separate falling through a grating, and being blown through a shoot by a strong current of air created by a fan blower. The cotton at the same time is passed through another shoot to be subjected to the succeeding operations of further cleaning, or to be delivered to the carding machine. The further cleaning, called scutching, is similar in principle to the willowing, the operation being more thoroughly accomplished by beating with blunt knives upon of the fineness of 278 hanks to the pound of 840 yards each. It was sold to the muslin manufacturers of Glasgow at 20 guineas the pound. These hanks are prepared by the next process, called reeling. The cops from the mule, or the bobbins from the throstle frame, are set in a frame so that they can be wound off upon a large 6-sided reel, which extends along the top of the same frame. With a reel of the circumference of 1½ yards, 560 revolutions give the length of a hank. Many of these are wound along the length of the reel at the same time. When taken off they are weighed separately, and the weight of each designates the fineness of the yarn. The number expresses the number of hanks required to weigh a pound. The coarsest yarns weigh about ½ pound to the hank; but the common qualities for coarse spinning run from 10 to 40 to the pound. The finest spinning seldom exceeds 300 hanks to the pound; no yarn finer than No. 350 was made in England previous to 1840. The next year Messrs. Houldsworth of Manchester produced No. 450, and at the great exhibition of 1851 they furnished some lace made of No. 600, and also muslin for a dress for the queen made of No. 460, which exceeds in fineness any of the famed India productions. In a notice in the London "Despatch" it was stated that the same firm exhibited threads of No. 900, and also one specimen of No. 2,150, such that a pound would reach 1,026 miles. Even the No. 600 is too delicate to be handled or to serve any useful purpose. The finer yarns are singed by being run through a gas flame; they are then passed over a brush, and run through a hole in a piece of brass just large enough to admit the yarn. Any knot or bulge stops the yarn, and the defect is immediately remedied. The hanks are made up into cubical bundles of 5 or 10 lbs., and pressed and tied, when they are ready for the loom or for being twisted into thread, properly so called. Of this there are several kinds, as the sewing thread, lace thread, stocking thread, &c. They are all produced by doubling and twisting together two yarns or more, and by machines very similar to the throstle frame; the yarns as they are twisted are passed through water or a weak solution of starch, which gives more firmness and strength to the thread.—For further data connected with this manufacture, the reader is referred to the articles CALICO, CALENDERING, FACTORY, LOOM.—Cotton is distinguished from linen by the peculiar structure of its fibre when seen under a powerful microscope, the form being flattened, crooked, and shrivelled, while that of the linen fibre is round and straight with occasional cross knots or joints. Linen yarn also becomes yellow in a strong and hot solution in water of caustic potash, while cotton remains white, or is colored very slightly yellow. The two fibres may also be distinguished by the different effects produced upon them by concentrated sulphuric acid. The stuff to be tested must first be thoroughly cleaned by boiling and repeated washing in pure water. When well dried it is dipped in the acid and left from half a minute to 2 minutes. The cotton threads become immediately transparent, the linen remaining white. It is then taken out and put in water to wash out the gummy matter produced by the cotton. On being dried, if the experiment has been well conducted, the yarns of cotton will have disappeared; but if the immersion in acid has been too long the linen also becomes transparent and eaten by the acid. Another method by which cotton is detected in unbleached linen is to place the stuff, after it is well washed in boiling water and dried, in a mixture of 2 parts of dried nitrate of potash and 3 parts of sulphuric acid, and leave it for 8 or 10 minutes. It is then washed and dried and treated with ether, to which a little alcohol is added. If cotton was present in the stuff, the ethereal liquid is thickened by the production of collodion. This may be separated, leaving the residue pure linen. When the fibre of cotton is thoroughly consumed, the remaining ash is found to be about 1 per cent. of the original weight.—The cotton seed produces about 4 per cent. ash, which consists largely of phosphates, as seen by the 2d of the following analyses, the 1st presenting the composition of the ash of the fibre:

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* The first arrangements for printing calico in the United States were planned for the mills of the Merrimack company, soon after operations were commenced at Lowell; but goods were probably first printed in Dover, N. H., and at Taunton, Mass. So difficult was it to procure the engraved cylinders, then recently introduced in the English print works, that Mr. Boott, one of the directors of the company, made a voyage to England expressly to engage engravers. The calico printing was intrusted to Mr. John D. Prince, who came from Manchester in 1826, and retired from his charge in 1855, with an annuity for life of $2,000 settled upon him by the company. Since 1846 the prosperity of the cotton manufacture of the United States has been seriously affected by the large importations from England. Of plain calicoes these have increased from 10,000,000 yards in that year to 85,000,000 yards in 1856, and of printed and dyed calicoes from 12,500,000 to 97,000,000.

I.

Carbonate of potash (with trace of soda)	44.30
Phosphate of lime (with trace of magnesia)	25.34
Carbonate of lime	8.97
Carbonate of magnesia	6.75
Silica	4.12
Sulphate of potash	2.90
Alumina	1.40
Chloride of potassium, Sulphate of lime, Phosphate of potash, Oxide of iron (a trace), and loss	6.23
Total	100.00

II.

Phosphate of lime (with trace of magnesia)	61.34
Phosphate of potash (with trace of soda)	31.78
Sulphate of potash	2.65
Silica	1.63
Carbonate of lime	0.47
Carbonate of magnesia	0.27
Chloride of potassium	0.25
Carbonate of potash, Sulphate of lime, Sulphate of magnesia, Alumina and oxide of iron, and loss	1.61
Total	100.00

The seed constituting a large proportion of the weight, it must rapidly extract from the soil elements essential to the growth of the plant; hence the importance of restoring it to the land as manure, unless some substitute of animal matters is provided. The seed is of an oily nature, yielding a vegetable drying oil; but the quantity does not appear to be sufficient to justify its extraction; and the seed is more valuable as a fertilizer than to be applied to illuminating purposes by the production of either oil or gas.—Cotton itself is converted to few other purposes beside affording a material for yarns and thread. It is used to some extent for ropes; but these are unsuitable for many purposes by reason of their liability to stretch and shrink. The batting is used for wadding dresses and bed comforters, and the raw cotton is made into mattresses, cushions, &c. By the action of nitric acid an explosive substance is prepared from the fibre, for the nature and uses of which see GUN COTTON and COLLODION. Cotton is a useful application in the dressing of burns and scalds, and a decoction of the root is sometimes administered as an emmenagogue, as that of the seeds is employed at the south as a remedy in intermittent fever.

COTTON WORM, the caterpillar of an owlet moth, of the tribe of *noctuæ* (*N. xylina*, Say). The perfect insect is of a triangular shape, about an inch in length; the upper wings reddish gray, a dark spot with a whitish centre in the middle; the under wings are darker. The caterpillars have 16 legs, but the foremost prop legs are so short that in creeping they arch up the back like the geometers or span worms; the color is green, with light yellow stripes and black dots along the back; the 2d and 3d generations are darker than the 1st; they grow to the length of an inch and a half. The eggs are deposited from 10 to 15 on the under surface of the tender leaves, to which they are firmly attached, and of a color resembling the leaf; the period of incubation is variously stated from 6 to 15 days, depending probably on the heat of the season; the time of hatching is at night, and the young begin to eat very soon, growing very rapidly; the skin is changed several times before they attain their full growth; in 15 to 20 days after attaining the full size they cease to feed, and form an imperfect cocoon of a leaf and silk; in this the chrysalis state is passed, from 10 to 12 days; after this the moths lay their eggs, and die after a period of about a week, or, according to some observers, surviving mild winters. This insect is in some years exceedingly destructive to the cotton, sometimes cutting off the entire crop of certain districts; it appears often in a sudden and unaccountable manner, as if it must migrate from the south. They were first noticed as destroyers of cotton about the year 1800, since which their ravages have been more or less serious almost every year; it is believed by some that they appear at intervals of 3 years in the same districts, and that their greatest ravages occur after intervals of 21 years; the years 1804, 1825, and 1846 were remarkable in this respect; the time of year varies from June to October. A moderate degree of cold is sufficient to kill them, though moisture and strong winds do not appear to disturb them. They devour both the short staple and the long staple cotton, and rarely, if ever, touch any other plant. When they appear early in the season, there are usually 3 broods. This is undoubtedly the insect referred to by Dr. Burnett in the "Proceedings of the Boston Society of Natural History," vol. iv. p. 316; he is of opinion that it comes from South America, and that the last brood perishes entirely, either from cold or starvation, leaving no progeny behind them. Fires in the fields have been recommended as attracting and destroying this moth; white cotton flags, about a yard square, are said to attract it, and to be used as deposits for the eggs; great numbers may be caught by molasses and vinegar spread on plates. But these and similar contrivances will be of little avail until the exact appearance of the first moths is ascertained; then their speedy destruction would prevent the production of the 2d and 3d crops, and thus limit, if it did not arrest, their ravages.—Another insect, destroying great numbers of cotton buds, is the boll-worm moth, belonging to the same tribe of *noctuæ*, and probably to the genus *heliothes*. This is a tawny, yellowish moth, which may be seen toward evening, in summer and autumn, hovering over the cotton blooms, and depositing a single egg in each flower; the egg is hatched in 3 or 4 days, and the worm eats its way into the centre of the boll, causing its premature fall; the insect instinctively leaves the boll when it is about to fall, and enters another, and finally attacks the nearly matured bolls, rendering the cotton rotten and useless. The caterpillars have 16 feet, creeping with a gradual motion, unlike the true cotton worm; they vary much in color, some being green, others brown, but all more or less spotted with black, and having a few short hairs. A single moth will lay 500 eggs, and, as 3 broods are produced in a year, a whole field will be very soon infested with them.—These are the two greatest enemies on the cotton plantations, and the same remedies are effectual in both. In the "Agricultural Report of the Commissioner of Patents," for 1855, is an excellent article by Townend Glover, Esq., on the insects found on the cotton plant, on the stalk, on the leaf, on the terminal shoots, on the flower, and on the boll, whether injurious, beneficial, or indifferent. Many cotton worms are destroyed by spiders, beetles, and ichneumon flies.

COTTON, CHARLES, an English humorist and poet, born at Beresford Hall, Staffordshire, in 1630, died at Westminster in 1687. He was educated at Cambridge, travelled on the continent, and inherited in 1658 his father's property, already much encumbered, to the burdens on which he soon added. His estate was near the river Dove, famous for its beauty and its trout, where he passed a studious and careless life, delighting his friends by his humor and accomplishments. He built a fishing house on the banks of the Dove, in which he entertained for years his friend Izaak Walton. For recreation as well as pecuniary relief, he translated several works from the French and Italian, among which were Montaigne's "Essays" and Corneille's tragedy of "Horace." He made a wealthy second marriage, which, however, did not remove his embarrassments, as the lady's fortune was secured from his mismanagement. In 1664 and 1672 he published "Scarronides, or Virgile Travestie," an indelicate burlesque of the 1st and 4th books of the Æneid. He also burlesqued several of the dialogues of Lucian, in poetical translations, and wrote a serious poem entitled the "Wonders of the Peake" (1681), a humorous piece entitled a

"Journey to Ireland," and several occasional poems. He is now best known by the second part which he added to the 5th edition of Walton's "Complete Angler," valuable for the technical information which it gives concerning fly fishing, and for its descriptions of the scenery of the Dove, and of his fishing-house on a little peninsula in the river, having a bowling green near by, and inscribed *Piscatoribus sacrum*, with a cipher including the first 2 letters of the names of Walton and Cotton.

COTTON, John, one of the first ministers of Boston, Mass., born in Derby, Eng., Dec. 4, 1585, died in Boston, Dec. 23, 1652. At the age of 13 he entered Trinity college, Cambridge, and was afterward fellow of Emmanuel and employed as lecturer and tutor. About 1612 he became vicar of St. Botolph's church in Boston, Lincolnshire, where he remained 20 years, noted as a preacher and controversialist, and inclining in his doctrines and practices toward the Puritan worship. His influence with his people carried them mostly with him, but he was at length informed against for not kneeling at the sacrament, and cited to appear before Archbishop Laud in the high commission court. Upon this he sought safety in flight, and after sojourning for some time in London went to America, arriving in Boston Sept. 4, 1633. In October he was ordained on a day of fasting, by imposition of hands by the minister and 2 elders, teacher of the church in Boston and colleague with Mr. Wilson the pastor. In this connection he remained over 19 years, with such influence and standing that he has been called the patriarch of New England. In 1642 he was invited, together with Hooker and Davenport, by the assembly of divines at Westminster, to assist in their counsels, and was in favor of accepting the invitation, but was dissuaded by Hooker, who was intent upon forming himself a system of church government for New England. His death was brought on by exposure in crossing the ferry to Cambridge, where he was going to preach. His reputation for learning was very high, and, as was frequent among the ministers of that time, was sustained by an accumulation of obscure and professional knowledge. He was a critic in Greek, wrote Latin with elegance, and could discourse in Hebrew, and spent 12 hours a day in reading, his favorite author being Calvin. His pulpit eloquence was famous for its simplicity and plainness, and his discourses were exceedingly effectual in exciting attention to religion. He was very regular in religious observances, keeping the Sabbath holy from evening to evening, and it was from him that the form of that observance was disseminated throughout New England. His publications were numerous, consisting of sermons and controversial works upon most of the subjects discussed in his time. The most important are those published in the course of his controversy with Roger Williams, and his "Power of the Keys" on the nature of church government. He maintained that the church is constituted of elders and brethren; that the elders are intrusted with the government to the extent of admissions and excommunications, yet that there is so much liberty left among the brethren that nothing of common concern can be imposed upon them without their consent. Against Williams he defended the interference of the civil power in religious matters for the support of the truth, maintaining the duty, for the good of the church and of the people, of putting away those who, after repeated admonitions, persist in rejecting fundamental points of doctrine or worship. Nevertheless he was charitable and benevolent, and contributed freely of his labors and substance to strangers and those in distress.—A monumental tablet, with a Latin inscription by Mr. Edward Everett, was erected in St. Botolph's church in 1857, in honor of Cotton, chiefly by contributions from his descendants in Boston, Mass.

COTTON, Sir Robert Bruce, an English antiquary, founder of the Cottonian library, born at Denton in Huntingdonshire, Jan. 22, 1570, died in London, May 6, 1631. He made a very valuable collection of ancient manuscripts, including many which had been scattered about the kingdom when Henry VIII. dissolved the monasteries. In 1629 he was arrested on a false suspicion of having written an obnoxious pamphlet, thrown into the tower, and his library was sequestrated. Though released, he was still denied access to his library; and to this deprivation he attributed the malady of which he died. His collection was augmented by his son and grandson, and, after having been partly destroyed by fire in 1731, was afterward transferred to the British museum.

COTYS, or Cotytto, a Thracian female divinity, whose festival (the Cotyttia) resembled that of the Phrygian Cybele. It was held at night, and celebrated with licentious revelry.

COUCH GRASS (*triticum repens*, Linn.), known by a great variety of names in different localities, such as twitch, witch, quitch, squitch, quack, quake, dog grass, chandler grass, wheat grass, is one of the most troublesome pests of the farm. The plant is about 2 feet high, having rough leaves, somewhat hairy, and trailing at the lower joints. Although a grass, it performs the office of a vile weed, being an insidious creeper, multiplying and ramifying itself in all directions. Its scraggy roots go deep into the soil, and take firm hold. Each joint, whether of the root or stem, can produce a new plant, which in turn, if not destroyed, will produce others beyond number. Every friend to enlightened agriculture is an enemy to couch grass. Some slovenly farmers let it grow as pasture and meadow, and thus infest their tillage land. Its nutritive qualities do not make up for its disadvantages in a thorough system of husbandry. Couch grass can withstand intense frost without injury. On lands sown with winter grain, or seeded down with grass, even if stripped of their snowy protection and winter-killed, couch grass commonly shows itself in early spring when no sign of the crops is to be seen.

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